"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

2/2 024 UNCLASSIFIED

CIRC ACCESSION NO--AP0116438 PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE IR SPECTRA OF Y SUB2 GE SUBN SI SUB(12NEGATIVE N) O SUB7 (I), WHERE N EQUALS 2, 1.6, 1.4, 1.2, 1.18, 1.08, 0.6, 0.4, 0.3, 0.1, 0.06, AND 0 AND OF ALPHA PRIME-Y SUB2 SI SUB2 O SUB7 (II) WERE RECORDED. SAMPLES OF THE SOLID SOLNS. WERE PREPD. FROM PURE OXIDES BY MEANS OF SOLID PHASE SYNTHESIS AT 1350DEGREES WITH COMBINATION OF ROASTING AND WET GRINDING. COMPARISON OF THE IR SPECTRA OF I WITH N EQUALS 0.4-1.18 AND II SHOWED SIMILARITY IN THE STRUCTURES OF THESE COMPDS. AND CONFIRMED CRYSTALLOOPTIC ANAL. DATA CONCERNING THE REGION OF HOMOGENEITY OF THE SYSTEM.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

UDC 519.95

SHEVYAKOV, N. N., BRYUKHANOV, V. A., MOISEYEV, A. A., MOISEYEV, S. G., and SULTAN

"Evaluation of the Coefficient of Technical Utilization of Complex Automatic Lines by the Method of Statistical Modeling"

Moscow, Avtomatizatsiya Operatsiy Proyektirovaniya Protsessov Mashinostroyeniya (Automation of Operations in the Design of the Processes of Machine Building), edited by V. I. Dikushin, "Nauka," 1970, pp 123-134

Abstract: One of the most important problems that arises in designing automatic lines with a complex structure is determination of the coefficient of technical utilization. Existing methods of analytical computation are based on a number of assumptions which make it possible to decrease the order of the system of differential equations involved but which introduce a divergence from the real coefficient of technical utilization. In the present article, an algorithm for investigating this coefficient for a complex automatic line is suggested. The algorithm, which is based on the method of statistical modeling on a computer (Monte-Carlo method), makes it possible to eliminate a number of assumptions and to reduce a variety of problems to a small number of general-purpose computational procedures.

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USSR

SHEVYAKOV, N. N., et al., Avtomatizatsiya Operatsiy Proyektirovaniya Protsessov Mashinostroyeniya (Automation of Operations in the Design of the Processes of Machine Building), edited by V. I. Dikushin, "Nauka," 1970, pp 123-134

As an example, the statistical modeling method is applied to a single-flow, interlinked automatic line with one adjuster and which consists of n aggregates. After briefly describing the mathematical model which they adopted and the basic assumptions which it necessitated, the authors present and explain a flowchart of the modeling algorithm.

Next, on the basis of their mathematical model, they developed an algorithm for investigating the coefficient of technical utilization of an automatic line consisting of n flows, q segments, and a adjusters. A two-page flowchart of the algorithm is presented. In order to verify the algorithm as a whole, the authors considered systems for which it is possible to find precise analytical solutions. The analytical solutions and the results obtained by modeling diverged at most by one to three percent.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

Acc. Nr.: AN0036647 S Ref. Code: UR0567

AUTHOR-- SHEVYAKOV, YU., SCIENCE EDITOR OF THE "AVIYATSIYA I KOSMONAVTIKA"

TITLE-- TRACKING THE ROCKETS

NEWSPAPER-- KNIZHNOYE OBOZRENIYE, APRIL 10, 1970, NR 15, P 4

ABSTRACT-- THE AUTHOR REVIEWS THREE BOOKS-- /1/ "FIRST STAGES", BY ALEKSEY IVANOV, /2/ "STEPS AMONG STARS", BY V. DENISOV AND V. ONISHCHENKO, AND /3/ "FIERY SLING", BY V. AZERNIKOV, PUBLISHED BY THE "MOLODAYA GVARDIYA", "ZNANIYE", AND "SOVETSKAYA ROSSIYA", RESPECTIVELY. IVANOV REMINISCES ABOUT HIS ASSOCIATION WITH KOROLEV'S TEAM. THE SECOND BOOK DISCUSSES THE USES OF THE MAN-COMPUTER SYSTEM IN SPACE AND AVIATION. THE THIRD BOOK DEALS WITH THE DEVELOPMENT OF EFFICIENT ROCKET FUELS.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

UDC: 551.596:534.143

SHEV'YEV, Yu. P., MATSEVICH, E. V., PUGACHEV, A. D.

"Using the Method of Electroacoustic Analogies in Measuring the Acoustic Transparency of Material Specimens"

Tr. Taganrog. radiotekhn. in-ta (Works of Taganrog Radio Engineering Institute), 1973, vyp. 34, pp 180-184 (from RZh-Fizika, No 5, May 73, abstract No 5Zh631 by Ye. B. Kudashev)

Translation: A new method is proposed for measuring the coefficient of acoustic transparency of material specimens and structural elements in water on an installation of the "shock tube" type. The direct system of electroacoustic analogies is considered, enabling representation of the specimen as a two-terminal pair network. It is shown that the voltage ratio at the input and output of the network determines the acoustic transparency of a specimen characterized in the logarithmic scale by the difference in levels of the acoustic pressure measured in a hydroacoustic tube behind and in front of the specimen. A relation is derived for calculating the coefficient of acoustic transparency from the input impedances of the investigated specimen in the open-circuit and short-circuit modes. The

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

SHEV'YEV, Yu. P. et al., Tr. Taganrog. radiotekhn. in-ta, 1973, vyp. 34, pp 180-184

paper gives the results of measurement of the variation, with frequency, of acoustic transparency of metal plates 1.4 and 0.4 cm thick. Some discrepancy between the experimental and theoretical results is attributed to the error in phase measurements. It is shown that the experimentally determined values of input impedances may also be used for calculating the modulus of normal elasticity and the density of experimental specimens of new sound-absorbing materials. The proposed method holds promise for studying the acoustic transparency of materials and structural elements at high hydrostatic pressures.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

UDC 578.087.8+577.472(26)

GITEL'ZON, I. I., LEVIN, L. A., SHEVYRNOGOV, A. P., FILIMONOV, V. S., ARTEMKIN, A. S., UTYUSHEV, R. N., and ZAGORODNIY, Yu. A.

"Measurement of Bioluminescence at Great Depths"

Moscow, Doklady Akademii Nauk SSSR, Vol 191, No 3, 1970, pp 689-692

Abstract: The recording of bioluminescence appears to be the only convenient way at present of studying abyssal organisms directly in their habitat. To carry out such investigations, the Institute of Physics of the Siberian Department of the Academy of Sciences USSR developed a bathyphotometric device with autonomous power supply and recording of signals. Magnetic recording is used for the signals coming from the light receiver. The bathyphotometer consists of two hermetically sealed containers joined together. The larger one holds the light receiver, power supply, program control system, and recording apparatus, while the smaller one holds a flashing lamp with program control and power supply. Measurements made in December 1968, by the research vessel Vityaz' in the Sea of Japan at a depth of 7000-7200 m are briefly described.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

1/3 019 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--MEASUREMENT OF BIOLUMINESCENCE AT MAXIMUM DEPTHS -U-

AUTHOR-(05)-GITELZON, I.I., LEVIN, L.A., SHEVYRNOGOV, A.P., FILIMONOV, V.S., ARTEMKIN, A.S.
COUNTRY OF INFO--USSR

SOURCE--MOSCOW, DOKLADY AKADEMII NAUK SSSR, VOL 191, NO 3, 1970, PP 689-692
DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, EARTH SCIENCES AND OCEANOGRAPHY, BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--BATHYPHOTOMETER, MARINE BIOLOGY, LUMINESCENCE, OCEANOGRAPHIC INSTRUMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/0270 STEP NO--UR/0020/70/191/003/0689/0692

CIRC ACCESSION NO--AT0108574

UNCLASSIFIED

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

2/3 019 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AT0108574

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REGISTRY OF BIOLUMINESCENCE IS EVIDENTLY THE ONLY AVAILABLE MEANS FOR STUDYING MANIFESTATIONS OF LIFE OF ABYSSAL ORGANISMS IN SITU. THE PHYSICS INSTITUTE SIBERIAN DEPARTMENT ACADEMY OF SCIENCES USSR HAS DEVELOPED AN ABYSSAL BATHYPHOTOMETER WITH A SELF CONTAINED POWER SOURCE WITH THE REGISTRY OF SIGNALS FROM A PHOTODETECTOR; IT IS CONNECTED TO THE SHIP BY A CABLE. MAGNETIC RECORDING IS USED FOR SIGNAL REGISTRY. AT THE SITE OF THE INSTRUMENT IT WAS DEEMED NECESSARY TO INTRODUCE INTO THE MEDIUM SOME FORM OF EXCITATION BECAUSE MECHANICAL EXCITATION BY THE INSTRUMENT ITSELF IS SCARCELY ADEQUATE AT THE DEPTHS WHERE MEASUREMENTS WERE MADE. THE EXCITATION SOURCE WAS A FLASH LAMP. THE ARTICLE IS ACCOMPANIED BY A BLOCK DIAGRAM OF THE INSTRUMENT. THE BATHYPHOTOMETER OPERATES IN ACCORDANCE WITH A PRESTIPULATED PROGRAM. THE DURATION OF AN INDIVIDUAL FLASH IS 1 MSEC. THE INSTRUMENT CONSISTS OF TWO COUPLED INSTRUMENT PACKAGES, ORIENTED AT AN ANGLE TO ONE ANOTHER IN SUCH A WAY THAT THE OPTICAL AXES OF BOTH PACKAGES INTERSECT AND ARE DIRECTED DOWNWARD. THE LARGER OF THE CONTAINERS HOLDS THE PHOTODETECTOR AND THE POWER SOURCE, THE PROGRAMMED CONTROL SYSTEM AND THE RECORDER. THE SMALLER CONTAINER HOLDS THE FLASH LAMP WITH PROGRAMMED CONTROL AND ITS POWER SOURCE. THE CONTAINERS ARE FABRICATED FROM A TITANIUM ALLOY AND ARE DESIGNED FOR OPERATING AT PRESSURES UP TO 1,500 KG-CM PRIME2, THAT IS, UP TO THE GREATEST OCEAN DEPTHS. THE INSTRUMENT WAS USED ABOARD THE "VITYAZ'" IN DECEMBER 1968 FOR MEASURING BIOLUMINESCENCE IN THE JAPANESE DEEP AT DEPTHS OF 7,000-7,200 M.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

3/3- 019 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AT0108574

ABSTRACT/EXTRACT--THE BATHYPHOTOMETER EXPOSURE TIME AT THE MEASUREMENT HORIZON WAS 60 MINUTES; DURING THIS TIME 18 BIOLUMINESCENT BURSTS WERE REGISTERED. INFORMATION IS GIVEN ON THE AMPLITUDES, DURATIONS AND ENERGIES OF THESE BURSTS.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

1/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--MECHANISM OF THE OXIDATION OF ORGANOTIN COMPOUNDS BY OZONE -U-

AUTHOR-(03)-ALEKSANDROV, YU.A., SHEYANOV, N.G., SHUSHUNOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 192(1), 91-4

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--OXIDATION, ORGANOTIN COMPOUND, OZONE, DECANE, COMPLEX COMPOUND, LEAD COMPOUND, CHEMICAL REACTION TEMPERATURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1864 STEP NO--UR/0020/70/192/001/0091/0094

CIRC ACCESSION NO--AT0132126

UNCLASSIFIED

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

2/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0132126

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETIC CURVES WERE SHOWN FOR THE REACTION OF ET SUB 2 SN(OME)SUB 2 WITH O SUB 3 IN DECANE WITH VARYING AMTS. O PRESENT; THE REACTION WAS RUN AT 20DEGREES AND AT 60DEGREES. THE REACTION WAS BIMOL. INITIAL COORDINATION OF O SUB 3 TO SN WAS PROVED BY ISOLATION OF A COMPLEX IN OZONOLYSIS OF ET SUB 3 SNCL IN HEXANE AT 0DEGREES, WHICH GAVE ACH AND A CRYST. SOLID, CONTG. BOUND O SUB 3, DECOMPD. 117-19DEGREES, IDENTIFIED AS THE COMPLEX 2ET SUB3 SNCL.O SUB3. ETSNCLO. THIS DECOMPD., EVEN AT ROOM TEMP,, SLOWLY TO FORM ACH AND ETSNCLO.ET SUB3 SNCL, M. 169-71DEGREES. EVIDENTLY ORGANOTIN COMPDS. REACT WITH O SUB 3 EITHER WITH OR WITHOUT LOSS OF O AND BY COMPLEX FORMATION. IN OZONOLYSIS OF ET SUB 3 SNCL THE HYDROPEROXIDIC PRODUCT ET SUB3 SNOSNET SUB 2 OOH IS DIRECTLY CONVERTED INTO EXOH AND ETSNCLO, BUT IN OZONOLYSIS OF ET SUB 3 PBCL IT WAS POSSIBLE TO ISOLATE ETPBCLO, A YELLOW SOLID, WHICH WAS INSOL. AND INFUSIBLE. OZONOLYSIS OF ET SUB 2 SNCL SUB 2 IN CCL SUB 4 AT 15DEGREES GAVE COLORLESS COMPLEX ET SUB 2 SNCL SUB 2.ETSNCL SUB 2 OOH, M. 61-20DEGREES. THIS HYDROLYZED TO ET SUB 2 SNCL SUB 2 AND H SUB 2 O SUB2. THE OZONOLYSIS OF ORGANOTIN COMPDS. IS CHARACTERIZED BY A LACK OF TEMPERATURE COEFF. OF THE REACTION RATE. FACILITY: NAUCH. ISSLED. INST. KHIM., USSR.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

1/2 027 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--EFFECT OF COORDINATION ON THE OZONOLYSIS OF METAL CARBON BONDS -U-

AUTHOR-(02)-ALEKSANDROV, YU.A., SHEYANOV, N.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(1), 246-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--OZONE, CARBON, METAL BONDING, CHEMICAL BONDING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0418 STEP NO--UR/0079/70/040/001/0246/0247

CIRC ACCESSION NO--AP0121092

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

2/2 027 UNCLASSIFIED

CIRC ACCESSION NO--AP0121092 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OZONOLYSIS OF ET SUB2 SNCL SUB2 GAVE MECHO, ACOH AND A COMPLEX ETCL SUB2 SNOOH.ET SUB2 SNCL SUB2, M. 61-2DEGREES. HYDROLYSIS OF THE LATTER GAVE H SUB2 O SUB2 AND ET SUB2SNCL SUB2. OZONOLYSIS OF ET SUB3 PBCL GAVE MECHO, ACOH, ETOH AND COMPLEX, INFUSIBLE POLYMERIC ETCLPBO, WHICH IS UNCHANGED UPON TREATMENT WITH H SUB2 O OR ORG. SOLVENTS. FACILITY: GORK. GOS. UNIV. IM. LOBACHEVSKOGO, GORKI, USSR.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR UDC 547.94

YAKHONTOVA, L.D., SHEYCHENKO, V.I., and TOLKACHEV, O.N.,
All Union Scientific Research Institute of Medicinal Plants

"Study of the Glaucium Flavum Alkaloids. The Structure of Glauvine"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 2, 1972, pp 214-218

Abstract: The alkaloids extracted from Glaucium flavum with chloroethane were subjected to chromatographic separation on an aluminum oxide packed column. The separation of alkaloids was accomplished by elution with benzene and benzene-methanol mixtures containing successively higher fractions of methanol (eluent of gradually increasing polarity). In addition to the earlier found components (glaucine, isocoridine, protopine and isoboldine) three new bases were eluted: (1) a yellow substance of $C_{20}H_{17}NO_5$ composition, identified as O-methylateroline; (2) a colorless substance of $C_{19}H_{21}NO_4$ composition identified as sinocutine; and (3) a green substance of $C_{20}H_{17}NO_5$ composition, previously unreported in literature, was named glauvine. It was found that glauvine can be obtained by heating o-methylateroline at 150° C for 18-20 hours. Acid solutions of glauvine are orange in color, while

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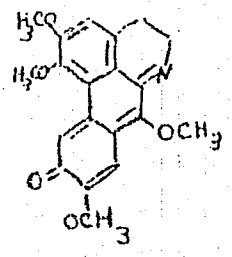
USSR

YAKHONTOVA, L.D., et al, Khimiya Prirodnykh Soyedinenii, No 2, 1972, pp 214-218

alkaline solutions are green. UV spectra of glauvine and O-methylateroline are very similar indicating the similarities in their chromophoric groups. On the basis of IR and NMR spectroscopic studies the following structure is proposed for glauvine.



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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

1/2 010 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--USE OF HIGH POWER DISCHARGE LIGHT SOURCES FOR LIGHTING BLAST FURNACES -U-

AUTHOR--SHEYDIN, S.A.

COUNTRY OF INFO--USSR

SOURCE--SVETOTEKHNIKA (USSR), NO. 1, P 15 JAN. 1970

DATE PUBLISHED--------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--BLAST FURNACE, XENON LAMP

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/0659 STEP NO--UR/0311/70/000/001/0015/0015

CIRC ACCESSION NO--AP0111852

UNCLASSIFIED

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

2/2 010 UNCLASSIFIED

CIRC ACCESSION NO--AP0111852 PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT HAS BEEN FOUND THAT THE EXISTING INSTALLATONS FILAMENT AND GAS DISCHARGE LAMPS ARE UNSITABLE FOR FOUNDRY PURPOSE DUE TO THE FAILURE OF LAMPS LIGHTNING THE FURNACES AND FAILURE OF THE CABLES. ANALYSIS OF THE PROBLEM RESULTED IN THE USE OF LARGE SUITABLY PLACED XEON LAMPS WITH MIRROR TYPE REFLECTORS AND AN EXPERIMENTAL INSTALLATION IN SERVICE HAS PROVED VERY ADVANTAGEOUS FROM THE ECONOMIC SUITABILITY AND RELIABILITY POINT OF VIEW.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

UDC 541.183.5:546.79

SHEYDINA, L. D., ROZOVSKAYA, N. G., and KOVARSKAYA, Ye. N.

"A Method of Studying Radioelement Sorption"

Leningrad, Radiokhimiya, Vol XIII, No 2, 1971, pp 180-184

Abstract: A study was made of the methods of investigating the sorption of radioelements. The sorption of Pu(IV) on glass as a function of the pH of a solution (freshly prepared) with a plutonium concentration of $4 \cdot 10^{-8}$M, the sorption of Pu(IV) on glass as a function of the pH of a solution made of aged solutions with a plutonium concentration of $4 \cdot 10^{-8}$M and the sorption of Pu(IV) on glass as a function of the pH of a solution made of freshly prepared solutions with a plutonium concentration of $4 \cdot 10^{-8}$M are plotted. The method of sorption from aged solutions is described, and it is found to be applicable when studying the sorption of radioelements when investigating their state in solution.

The results obtained by various authors are discussed, and an experiment is described in which the causes of contradictory data of various authors

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

SHEYDINA, L. D., et al., Radiokhimiya, Vol XIII, No 2, 1971, pp 180-184

obtained in the study of the sorption of Pu(IV) under various experimental conditions are established. The sorption mechanism is discussed in detail and reasons are given for the various shapes of the curves. Both experimental errors and impurities are given as causes for these differences.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

UDC 54-168:546.799.4

SHEYDINA, L. D. and KOVARSKAYA, Ye. N.

"Colloidal State of Pu(IV) in Aqueous Solutions"

Moscow, Radiokhimiya, Vol 12, No 2, 1970, pp 253-259

Abstract: A study was made of the state of Pu(IV) in a wide range of concentrations: 10^{-10} to 10^{-5} M. To extend the range of plutonium concentrations, the isotopes ^{239}Pu ($T = 2.4 \cdot 10^4$ years) and ^{238}Pu ($T = 92$ years) were used. The valence state of plutonium was verified spectrophotometrically or (for small amounts) by coprecipitation with zirconium phenylarsonate. Pu(IV) in the starting solution was dissolved in 1.5 M nitric acid. Working solutions of Pu(IV) were prepared by adding redistilled ammonia or nitric acid; water was doubly distilled. The state of Pu(IV) was investigated by three methods: adsorption, centrifuging, and electrophoresis. Curves describing the sorption of Pu(IV) -- in the 10^{-10} to 10^{-3} M concentration range -- on quartz glass (from solutions in which equilibrium was established between the different forms of plutonium) as a function of solution pH are characterized by a steep rise and a maximum in the region pH $\simeq$ 3. Apparently this change is due to appearance of hydrolyzed cations of Pu(IV) in which the number of hydroxyl groups per plutonium rises with rising solution pH; from 1 to 3.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

SHEYDINA, L. D., et al, Radiokhimiya, Vol 12, No 2, 1970, pp 253-259

It is also concluded that polymerization of plutonium is the reason for the shift in the maximum on the sorption curve characterizing the onset of hydroxide formation, toward the high pH values in the transition from trace concentrations of the element to concentrations on the order of 10-6 M.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

UDC 51:621.391

KOLESNIKOV, M. A., SHEYENBERGAS, I. M.

"The Schaeffer Function in Four-Valued Logic"

Raboty po Tekhn. Kibernet. Vyp. 3 [Works on Engineering Cybernetics, No 3 -- Collection of Works], Moscow, Acad. Sci. USSR Computer Center, 1971, pp 50-100, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V443 by G. Blokhina).

Translation: The 4-valued logic P_4 is analyzed. Function f from P_4 is called a Schaeffer function if its closure relative to the operations of superposition corresponds with P_4, i.e. f forms a system complete in P_4. Clearly, function f is a Schaeffer function when and only when it is not contained in any of the so-called subcomplete classes, i.e. the closed sets of functions which differ from P_4, but the union of which with any function not belonging to it is a complete system in P_4. It is also clear that the system of subcomplete classes may be, generally, redundant for explanation of the Schaeffer quality of a function. This work establishes that this is actually the case. Of the entire set of sub-complete classes in P_4, the number of which as we know (RZhMat, 1969, 10A35) is equal to 82, system OR of 30 subcomplete classes is separated and it is demonstrated that membership of a function in each of these is a criterion which indicates that it is a Schaeffer function; it is also demonstrated that any natural sub-system of system OR does not have this property.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

Acc. Nr.: AM0106707 Ref. Code: UR0000

Sheyenko, I. N.; Oreshkin, V. D.; Repkin, Yu. D.

Contemporary Build-Up Materials Based on Refractory Compounds (Sovermennyye naplavochnyye materialy na osnove tugoplavkikh soyedineniy) Kiev, Naukova Dumka, 1970, 235 pp (SL:2078)

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VII	Hardening of Parts of Metallurgical Equipment by Means of Alloys Based on Refractory Compounds	206

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Reel/Frame
19890025

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APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

Acc. Nr.: AM0106707

Conclusion
Bibliography

225
228

The book deals with theoretical principles and characteristics of the build-up process...

It was written for a wide circle of engineers, technicians and scientists specializing in the field of welding and surfacing in machine construction, ship building, agriculture and construction; it can be useful also to students.

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Reel/Frame
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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

UDC 621.771.28.001.5

POLUKHIN, P. I., POTAPOV, I. N., FINAGIN, P. M., and SHEYKH-ALI, A. D.

"Theoretical Developmental Work on the Rolling Process in the Area of Large Feeding Angles"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya," 1970, pp 158-163

Translation: A theoretical study of the process of cross-screw rolling at large feeding angles is made. It is noted that, in this case, the process has specific features which require a new approach to calibrating the tool and adjusting the mill. Two figures.

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APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

UDC 621.771.28.001.5

POLUKHIN, P. I., POTAPOV, I. N., FINAGIN, P. M., and SHEYKH-ALI, A. D.

"An Investigation of the Piercing Process on the 30-102-Type Rolling Aggregate"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya," 1970, pp 130-136

Translation: The article gives results of experimental investigations made on the TPAZO-102 tube-piercing mill of the power parameters of the piercing process in the area of large feeding angles. Measurements are made of the full pressure of the metal on the rolls, the force on the mandrel, the torsional moments, and the piercing power. The data obtained may be used in designing and calculating modern-type rolling aggregates. Six figures.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

UDC 621.771.28.001.5

POLUKHIN, P. I., POTAPOV, I. N., FINAGIN, P. M., and SHEYKH-ALI, A. D.

"An Investigation of Speed Conditions of the Piercing Process in the Area of Increased Feeding Angles and the Quality of Pipes"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya," 1970, pp 136-142

Translation: The article gives results of experimental investigations conducted on the TPAZO-102 tube-piercing mill of speed conditions of the piercing process with large feeding angles. A significant decrease in machine piercing time with an increase in the feeding angle is established. New conditions for the piercing process are developed which made it possible to improve the quality of sleeves and pipes in terms of surface condition and geometric conditions. Six figures and one table.

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APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

UDC:

USSR

SHEYKHET, E. G. and YEFIMOV, O. N., Institute of Semiconductors of the USSR Academy of Sciences, Leningrad

"Photoelectric Absorption and Diffusion Scattering During the Anomalous Transmission of X-rays in Ge Single Crystals"

Leningrad, Fizika Tverdovo Tela, Vol 14, No 3, Mar 1972, pp 734-736

Abstract: The authors analyze the absorption and scattering processes of x-rays during their interaction with cluster-type defects (clustering of impurity atoms) and loop-type dislocations. The average distance of the static displacement of atoms is determined during the formation of dislocation-type loops in the Ge-As system. It is shown that photoelectric absorption and diffusion scattering during anomalous transmission of x-rays depend on defect size and magnitude of the deformations, which distort the crystal lattice during the decay of germanium-based, supersaturated solid solutions. Original article: two formulas, one figure, two tables, and no bibliographic entries.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

1/2 031 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--EFFECT OF IMPURITY PRECIPITATIONS ON THE ANOMALOUS X RAY TRANSMISSION IN HEAVILY ARSENIC DOPED GERMANIUM -U-

AUTHOR-(03)-EFIMOV, O.N., SHEYKHET, E.G., DATSENKO, L.I.

COUNTRY OF INFO--USSR

SOURCE--PHYSICA STATUS SOLIDI, 1970, VOL 38, NR 1, PP 489-498

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GERMANIUM SEMICONDUCTOR, CRYSTAL DISLOCATION, X RADIATION, WAVE PROPAGATION, SEMICONDUCTOR IMPURITY, ARSENIC, SOLID SOLUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/1067 STEP NO--GE/0030/70/038/001/0489/0498

CIRC ACCESSION NO--AP0107576
UNCLASSIFIED

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

2/2 031 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AP0107576
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTAL DATA OF QUANTITATIVE STUDIES OF THE INTEGRAL CHARACTERISTICS OF ANOMALOUS X RAY TRANSMISSION ARE GIVEN FOR GERMANIUM WITH DIFFERENT DISLOCATION DENSITIES, DOPED WITH ARSENIC UP TO A CONCENTRATION OF APPROXIMATELY EQUAL TO 4 TIMES 10 PRIME19 AT-CM PRIME NEGATIVE3 AT VARIOUS TAGES OF EXISTENCE AND DECOMPOSITION OF THE SOLID SOLUTION. THE STATE OF SOLID SOLUTION WAS CONTROLLED BY ELECTROPHYSICAL MEASUREMENTS AND X RAY TOPOGRAPHS (BORRMANN'S METHOD). ON THE BASIS OF THE RESULTS OBTAINED SOME CONCLUSIONS ARE DRAWN ABOUT THE CHARACTER OF THE DISTURBANCES GENERATED BY THE ABOVE MENTIONED DECOMPOSITION OF THE SOLID SOLUTION. PARTICULARITIES OF THE SOLUTION BEHAVIOUR ARE CONSIDERED WHEN THE CONCENTRATION OF ARSENIC IS NEAR THE LIMIT. FACILITY: INSTITUTE OF SEMICONDUCTORS, ACADEMY OF SCIENCES OF THE USSR, LENINGRAD. FACILITY: INSTITUTE OF SEMICONDUCTORS, ACADEMY OF SCIENCES OF THE UKRAINIAN SSR, KIEV.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

UDC: 51

MAKAROV, V. L., TITOV, V. V., and SHEYKHETOV, B. M.

"A Model for Designing the Production Program for an Industrial Enterprise"

Sb. tr. In-t mat. Sib. otd. AN SSSR (Collection of Works, Institute of Mathematics, Siberian Division, Academy of Sciences, USSR) No 7(24), 1972, pp 61-70 (from RZh--Matematika, No 7, 1973, Abstract No 7V569)

Translation: In this model for designing the production program of an industrial enterprise, one of the steps in the operation model for the enterprise, the existing practice of computing the production problem is formalized. Authors' abstract.

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APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR UDC 616.981.55-092.9-085.214.22-059:615.221]-07:616.832-008-07

KRYZHANOVSKIY, G. N., SHEYKHON, F. D., and IGON'KINA, S. I., Institute of Normal and Pathological Physiology, USSR Academy of Medical Sciences

"Effect of Some Phenothiazine Compounds and α-Adrenergic Blocking Agents on Spinal Cord Activity After Disruption of the Inhibitory Mechanisms by Tetanus Toxin"

Moscow, Farmakologiya i Toksikologiya, No 3, 1973, pp 276-280

Abstract: Intravenous injection of chlorpromazine (0.75 mg/kg) resulted in deep depression of background and trace electrical activity of the extensor and flexor muscles in rats with local tetanus and intact spinal cord but only mild inhibition of evoked activity. However, in animals with transected spinal cord, chlorpromazine in the same dose produced the opposite effect -- intensification of background and especially trace activity. Chlorpromazine also intensified the electrical activity of the muscles in animals without tetanus but with transected spinal cord. The α-adrenergic blocking agents phentolamine and to a lesser extent dihydroergotoxin also inhibited electrical activity in rats with intact spinal cord and intensified it in the injured animals. Trifluoperazine had virtually no effect on animals with tetanus whether their spinal cord was intact or not.
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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

UDC 616.981.551-092:612.833.8

USSR

KRYZHANOVSKIY, G. N., and SHEYKHON, F. D., Laboratory of the Pathophysiology of Infectious Intoxications Institute of Normal and Pathological Physiology, Academy of Medical Sciences USSR, Moscow

"Descending Facilitating and Inhibiting Effects From the Medulla Oblongata on the Monosynaptic Reflexes in Tetanus Intoxication"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 70, No 7, Jul 70, pp 34-39

Abstract: The effect of stimulation of the facilitating and inhibiting structures of the medulla oblongata on the monosynaptic reflexes in local tetanus was studied in experiments on cats under mild nembutalchloralose anesthesia. With the development of tetanus intoxication, facilitation of monosynaptic reflexes increased and polysynaptic activity appeared upon stimulation of the facilitating structures. Stimulation of the inhibiting structures, instead of the normally characteristic depression, causes facilitation of monosynaptic reflexes and appearance of polysynaptic activity on the side of injection. This effect is noted immediately or during the first dozen milliseconds after stimulation, i.e., at a time when inhibition is most pronounced under normal conditions. On the side contralateral to toxin injection, inhibition is preserved upon stimulation of the same structures. In local tetanus, the appearance of excitation reactions instead of inhibition is

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

KRYZHANOVSKIY, G. N., et al, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 70, No 7, Jul 70, pp 34-39

explained by the disappearance, under the effect of the toxin, of the normally prevailing inhibiting component from mixed inhibition-excitation influences, which motorneurons sustain upon stimulation of inhibiting structures and which increase due to the activity of interneurons.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

UNCLASSIFIED PROCESSING DATE--03JUL70

TITLE--THE IMPORTANCE OF GLUCOCORTICOID METABOLISM IN THE TREATMENT OF VIRAL HEPATITIS -U-

AUTHOR--RUDNEV, G.P., SHEYKMAN, M.B., LATSINIK, G.YE.

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33

COUNTRY OF INFO--USSR

SOURCE--KLINICHESKAYA MEDITSINA, 1970, VOL 48, NR 1, PP 72-79

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEPATITIS, VIRAL DISEASE CORTICOID, METABOLISM, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1978/0570 STEP NO--UR/0497/70/048/001/0072/0079

CIRC ACCESSION NO--APO045593
UNCLASSIFIED

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9"

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Acc. Nr: AP0045593 Ref. Code: UR0497

PRIMARY SOURCE: Klinicheskaya Meditsina, 1970, Vol 48, Nr 1, pp 72-79

THE IMPORTANCE OF GLUCOCORTICOID METABOLISM IN THE TREATMENT OF VIRAL HEPATITIS

Rudnev, G. P.; Sheykman, M. B.; Latsinik, G. Ye.

Under study was the state of processes of glucocorticoid conversion in 98 patients suffering from viral hepatitis of diverse severity. There was found a reduced excretion of reduced tetrahydrometabolites, testifying to a disturbance of enzymatic processes of cortisol inactivation, impairment of processes of binding of corticosteroids with glucuronic and sulfuric acids, decrease of the binding capacity of blood plasma transcortin, diminished excretion of 11-oxy-17-ketosteroids and increased excretion of 6-beta-oxycortisol. There was established a relationship between metabolic disturbances of cortisol and the severity of the disease. The authors analyze the pathogenetic importance of disclosed metabolic disturbances of glucocorticoids, as well as the possibility of using indices of cortisol metabolism for assessing the severity of the disease, for prognosis and for control over the effectiveness of treatment.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

1/2 025 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--A GENERAL PURPOSE MULTIBALL BURNISHER -U-

AUTHOR-(03)-ANDRIYASIN, V.A., CHEPA, P.A., SHEYKO, I.I.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, STANKI I INSTRUMENT, NO 2, 1970, PP 30-31

DATE PUBLISHED--------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--HYDRAULIC EQUIPMENT, SURFACE PROPERTY, METAL POLISHING, PLASTIC DEFORMATION, METAL WORKING MACHINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/1776 STEP NO--UR/0121/70/000/002/0030/0031

CIRC ACCESSION NO--AP0114275

UNCLASSIFIED

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

2/2 025 UNCLASSIFIED PROCESSING DATE--090CT70

CIRC ACCESSION NO--AP0114275

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOR FINISHING WORKS ON PARTS OF LOW RIGIDITY (SUCH AS COUPLING RODS FOR HYDRAULIC CYLINDERS) BY THE METHOD OF SURFACE PLASTIC DEFORMATION, THE SCIENTIFIC RESEARCH INSTITUTE OF MACHINERY MANUFACTURE AND METAL WORKING (MINSK) HAS DEVELOPED A GENERAL PURPOSE MULTIBALL BURNISHER, A DISTINCTIVE FEATURE OF WHICH IS THE POSSIBLITY OF READJUSTMENT FOR PROCESSING PARTS WITH A DIAMETER FROM 10--32 MM VIA THE PLACING OF BALLS OF APPROPRIATE DIMENSIONS. A DISCRIPTION OF THE MACHINE IS GIVEN, AND ITS OPERATION IS DESCRIBED. SUCH BURNISHERS ARE RECOMMENDED FOR FINISHING WORK ON PARTS OF VARIOUS SIZES WITH A REQUIRED SURFACE CLEANNESS OF CLASS 9-10.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

UDC 536.4:669.715:669.018

VARICH, N. I., and SHEYKO, T. I.

"Thermal Expansion of Al-Mo and Al-Zr Alloys, Produced With High Cooling Rates"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 30, No 2, Aug 70, pp 443-445

Abstract: With cooling rates on the order of 10^4-10^{6}°/sec from the liquid state, a significant expansion of the area of the solid solution is noted in alloys of aluminum with transition metals. This process is accompanied by the appearance of metastable phases and changes in a number of physical properties of the solid solution. One of the most important peculiarities of the metastable solid solutions is their high temperature stability. This work presents a study of the changes in the coefficient of linear expansion of Al-Mo and Al-Zr alloys in the 23-450° interval. Foil specimens 0.09-0.1 mm thick were produced by cooling a drop of the melt on a rotating copper drum.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR UDC 621.791.001.5:669.14:62-408.3:669.295

SHCHERBAK, M. A. (Engineer), ARISTOV, V. S. (Cand. of Techn. Sciences), SHEYKO, V. I. (Engineer) and PROKHOROV, P. A. (Cand. of Techn. Sciences)

"Problems of Welding Titanium-Clad Steel"

Moscow, Svarochnoye proizvodstvo, No 2, Feb 72, pp 19-20

Abstract: Automatic welding is finding expanding application in the fabrication of structures from clad steel. Of some interest therefore is the use of automatic welding of structures from titanium-clad steel. The experimental material in this study was St.3 steel clad with 3-4 mm VT1 titanium, the combined thickness being 10-20 mm. The experimental welding was performed under linear energies of 2300-8500 cal/cm. It is shown that the boundary layer of titanium-clad steel may be heated up to 700°C without affecting the mechanical properties. Heating the steel above that temperature causes a reduction of resistance to direct pull and shear. Discussed also is the need of lap-welded strap-reinforced facings to eliminate faulty fusions in the cladding layer. Tensile tests on both manual and automatic welded specimens showed 40.0-47.5 kg/mm^2. Static bend tests at a 160-degree angle performed on specimens of butt joints with longitudinal welds both manual and automatic failed to separate the cladding layer in the weld area. (2 illustr., 1 table, 5 biblio. references)

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

PUBLIC Health

GLORY

SO: JPRS 54194
6 OCT 71

UDC: 613.98(-22)

INVESTIGATION, PROPHYLAXIS, AND TREATMENT OF PREMATURE AGING OF THE ELDERLY AND AGED IN A RURAL DISTRICT HOSPITAL

[Article by V.P. Sheyko, Ionifov District Hospital, Kazatinskiy Raven, Vinnitskaya Oblast, Ukrainian SSR; Moscow, Sovetskoye Zdravookhraneniye, Russian, No 8, 1971, pp 18-21]

According to the data of the Central Statistical Administration, in 1970, 11.8 percent of the population* consisted of individuals over the age of 60 years. According to the information of social security agencies, in 1957, about 7.5 blue and white collar workers received old age pensions.

Since the revolution there has been a more than four-fold decline in total mortality rate in the USSR, and a more than ten-fold decline in childhood deaths. In this connection there has also been an increase in number of individuals who reach an age of over 65 years. Even I.I. Mechnikov and S.P. Botkin had spoken of the existence of physiological and premature aging. The objective of gerontology and geriatrics amounts to assuring physiological aging.

Aside from social conditions which affect longevity, of enormous importance are natural factors, such as locality, meteorological conditions, chemical composition of the atmosphere, soil, and water, as well as living habits, customs, and traditions. Therefore, along with experimental investigations and research on new therapeutic and prophylactic agents helpful to attain longevity, it is also necessary to intensify investigation of basic factors on the local level.

A survey conducted under the supervision of the Institute of Physiology imeni A.A. Bogomolets revealed that there were 11,000 long-lived individuals, i.e. those 90 or more years of age, in 25 oblasts of the Ukraine. Among them there was prevalence of women.

According to the recommendations of the laboratory of experimental therapy

*Pravda, 17 April 1971.

SHEYKO, V.P.

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

UDC 621.317.757(088.8)

SHEYMAN, V. L.

"Two-Cascade Recirculator"

USSR Author's Certificate No 252467, Filed 5 Jun 68, Published 6 Feb 70 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9A144P)

Translation: The proposed two-cascade recirculator contains two lines with multiple delay time relations, closed feedback circuits via frequency shift devices, a shift frequency generator of the first recirculator and summators. The recirculator is distinguished by the fact that in order to improve the resolution with respect to frequency a frequency multiplier is used in it between the shift frequency generator of the first recirculator and the shift frequency device of the second. The multiplier increases the shift frequency of the second recirculator as many times as the delay time of the second cascade is greater than the delay time of the first cascade.

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Acc. Nr: AP0043925 Abstracting Service: 5170 Ref. Code: UR0141
INTERNAT. AEROSPACE ABST.

A70-23143 Experimental investigation of the characteristics of two-dimensionally periodic slow-wave structures (Eksperimental'noe issledovanie kharakteristik dvumerno-periodicheskikh zamedliaiushchikh sistem). A. G. Shein, V. I. Moliavko, and G. Ia. Krasovskii (Khar'kovskii Institut Radioelektroniki, Kharkov, Ukrainian SSR). *Radiofizika*, vol. 13, no. 1, 1970, p. 152-154. In Russian.

Experimental verification of Shein's (1968) theoretical study of the characteristics of a two-dimensionally periodic slow-wave structure. It is found that Shein's formulas derived in zero approximation, accounting only for the first harmonic are, in general, in satisfactory agreement with the experimental data. A certain increase in the error at the band boundaries is attributed to an augmented influence of the higher spatial harmonics on the structure of the hf field.

V.P.

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REEL/FRAME 19770351

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

CHEMICAL TRANS.

SHEYN, S M.

SINGLE-ELECTRON TRANSFER AND CHEMICAL TRANSFORMATIONS

(Conference in Rostov-on-Don)

[Article by candidate of Chemical Sciences Z. V. Todres, Moscow, Vestnik Akademii Nauk SSSR, Russian, No 9, September 1973, pp 102-106]

A conference on the role of electron transfers in chemical reactions was held in Rostov-on-Don on 22-25 May. It was organized by the Northern Caucasus Scientific Center of the High-er School; about 40 reports were presented. Participating in the conference were the leading chemical institutes of the AS USSR and the Republican academies, and also Rostov-on-Don, Moscow, Leningrad and Gor'kiy universities.

Chemical reactions are usually regarded as the rupture and formation of bonds, that is, the rearrangement of the skeleton of a molecule. It is now considered, however, that the displacement of atoms or atomic arrangements is preceded by the transfer of electrons from one of the reacting molecules to the other. The study of that stage, which has become possible through the use of new instrumental methods of investigation, especially of electron paramagnetic and nuclear magnetic resonance, expands concepts of the reaction mechanism as a sequence of elementary stages known to us.

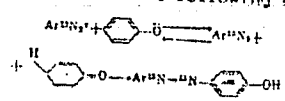
As a result of electron transfer new particles appear, not known to organic chemistry of the past. The properties of those products were examined in a number of reports. Hemoglobin, cytochrome C and other enzymes with Fe(III) after electron transfer give nonequilibrium forms in which the iron has already gone over into the state Fe(II) but the protein part still retains the previous configuration (R. M. Davydov). The transformation of 4-4'-dinitro-cis-stilbene into an anion-radical is accompanied by complete cis-trans-isomerization. Destruction of the symmetry of the molecule leads to establishment of equilibrium 4-nitro-cis-stilbene in the presence of electron transfer gives a mixture

JPRS 60661, 30 Dec 73

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

O. Yu. Okhlobystin, E. N. Bubnov et al arrived at the conclusion that the aromatic hydrocarbons forming from aryl diazonium salts under the effect of donor compounds have a radical origin. According to the data of I. P. Gragerov and A. P. Levit, the kinetics of the reaction of diazonium salts with hypophosphorous acid can be described by equations of classical radical-chain processes, which include the stages of initiation, propagation and termination of the chains. For different aryl diazoniums the rate of electron transfer and nitrogen coupling vary symbatically (B. I. Medvedev). It can be assumed that in the presence of nitrogen coupling at first there is electron transfer, and later the reaction of radicals to form the azo dye. L. A. Polyakova, K. A. Bilevich et al used the method of heteronuclear resonance of ^{15}N to control the reaction of C_6H_5-$^{15}NBF_4$ with sodium phenolate in an acetone-methyl alcohol mixture. In the first moments after the solutions were mixed a strong positive polarization of the signals belonging to the dye was observed. The signal from the starting diazonium salt also was polarized. They consider that this indicates reversibility of the first stage of the following equation:



The role of electron transfers proves to be deciding also for another heterolytic reaction -- nucleophilic substitution of an aromatic carbon atom. S. M. Sheyn, L. V. Bryukhovetskaya et al substantiated the scheme of transformation of p-nitrochlorobenzene into p-nitroanisole, which takes into consideration the presence in the reaction mixture of anion-radicals of the initial and end products and also includes acts of chain transfer through electron exchanges. An important feature of the scheme is that it organically combines newly formulated concepts with already known ones, leading in the end to the usual predecessor of the substitution product -- a sigma-complex. Consequently, heterolytic reactions are not purely ionic, but they cannot be regarded as purely radical.

The participants in the conference emphasized that revelation of the role of electron transfers is a very important task, as it permits more profoundly understanding the essence of chemical transformations and, on the basis of that, more correctly selecting the conditions of reactions and increasing the yield of useful products.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

1/2 016 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--PMR SPECTRA OF PRODUCTS OF THE REACTIONS OF 1,3,5, TRINITROBENZENE AND 2,4,6,TRINITROANISOLE WITH SODIUM METHYLATE -U-

AUTHOR-(03)-SHEYN, S.M., BROVKO, V.V., KHMELINSKAYA, A.D.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 781-4

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MAGNETIC RESONANCE, SPECTRUM, NITROBENZENE, METHOXY COMPOUND, ORGANIC COMPLEX COMPOUND, ORGANOSODIUM COMPOUND, ANISOLE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1945 STEP NO--UR/0366/70/006/004/0781/0784

CIRC ACCESSION NO--AP0125534

UNCLASSIFIED

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

2/2 016 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0125534

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE REACTION GIVES MONOMETHOXY, DIMETHOXY, AND TRIMETHOXY SIGMA COMPLEXES (MEISENHEIMER COMPDS.) OF 1,3,5,TRINITROBENZENE OR 2,4,6,TRINITROBENZENE. PMR SPECTRA SHOWN THAT THE TRIMETHOXY COMPLEXES HAVE 2 NEG. ELEC. CHARGES. THE FORMATION OF LESS STABLE TRINITROMONOMETHOXYPHENYL ANION RADICALS WAS ALSO DETECTED. THE FORMATION OF THE MONOETHOXY AND DIMETHOXY SIGMA COMPLEXES OCCURS SIMULTANEOUSLY. FACILITY: NOVOSIBIRSK. INST. ORG. KHIM., NOVOSIBIRSK, USSR.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

1/2 014 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--ROLE OF SINGLE ELECTRON TRANSFER STEPS IN REACTIONS OF ORGANIC COMPOUNDS -U-

AUTHOR-(04)-BLYUMENFELD, L.A., BRYUKHOVETSKAYA, L.V., FOMIN, G.V., SHEYN, S.M.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(4), 931-44

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTRON, ORGANIC CHEMISTRY, CHEMICAL REACTION MECHANISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1160 STEP NO--UR/0076/70/044/004/0931/0944

CIRC ACCESSION NO--AP0128582

UNCLASSIFIED

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

2/2 014 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0128582
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SINGLE ELECTRON TRANSFER IN HETERCLYTIC CHEM. REACTIONS IS REVIEWED WITH 60 REFS. FACILITY: INST. KHIM. FIZ., NOVOSIBIRSK, USSR.

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APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

SHEYNAUSKAS, R. I.

"Algorithm for Establishment of Isomorphism and Isomorphic Embedding of two Graphs"

Vychisl. Tekhnika, T. 3 [Computer Technology, Vol 3 -- Collection of Works], Kaunas, 1972, pp347-353 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V408, by V. Zemlyachenko).

Translation: An algorithm is suggested for establishment of isomorphism and isomorphic embedding of weighted graphs. The author notes that the difficulty of the algorithm depends strongly on the structure of the graphs. Certain experimental data are presented on the effectiveness of the machine realization of this algorithm.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

UDC: 681.3

ABRAYTIS, L. B., SHEYNAUSKAS, R. I.

"Typical Characteristics of Functional Diagrams in Problems of Arrangement"

V sb. Avtomatika i vychisl. tekhn. (Automation and Computer Technology--collection of works), No 3, Vil'nyus, "Mintis", , 1971, pp 199-210 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V887)

Translation: An algorithm is presented for representing connective trees of individual connected sets in such a way as to minimize the connectedness of the diagram. Execution of the algorithm involves following the goal of increasing the number of parallel connections between two functional elements and reducing the number of elements connected directly to the element being studied. It is proved that the algorithm guarantees reaching the optimum solution. Authors' abstract.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

UDC 51:621.391

KOLESNIKOV, M. A. and SHEYNBERGAS, I. M.

"Scheffer Functions in a 4-Valued Logic"

Moscow, Raboty po tekhn. kibernet.--Sbornik (Works on Technical Cybernetics -- Collection of Works), Computer Center of the Academy of Sciences, USSR, No 3, 1971, pp 50-100 (from Referativnyy Zhurnal -- Matematika, No 6, June 71, Abstract No 6V443, by G. Blokhina)

Translation: A 4-valued logic P_4 is examined. A function f of P_4 is called a Scheffer function if its closure relative to the superposition operations coincides with P_4; that is, f forms a system that is complete in P_4. Clearly, the function f is a Scheffer function if and only if it is not contained in a single one of the so-called precomplete classes; that is, the closed set of functions which is distinct from P_4, but whose union with any function not belonging to it is now a system complete in P_4. It is also clear that a system of these precomplete classes for clarifying Scheffer status can, generally speaking, be redundant. The work establishes that this actually is the case. Of the entire set of precomplete classes in P_4, whose number, as we know

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USSR

KOLESNIKOV, M. A. and SHEYNBERGAS, I. M., Raboty po tekhn. kibernet.--
Sbornik, No 3, 1971, pp 50-100

(Referativnyy Zhurnal -- Matematika, Abstract No 10A35, 1965) is 82, a subsystem $\mathfrak{M}$ of 30 precomplete classes is singled out, and it is shown that the nonmembership of the function in each of these is the criterion of its Scheffer status. It is also stated that any proper subsystem of the system $\mathfrak{M}$ no longer exhibits this property.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

UDC 536.722:536.63

SHEYNDLIN, A. Ye., BELEVICH, I. S., KOZHEVNIKOV, I. G.

"Study of the Enthalpy and Heat Capacity of Materials Based on Niobium Carbide at High Temperatures"

Moscow, Teplofizika Vysokikh Temperatur, Vol 11, No 1, Jan-Feb 73, pp 88-92.

Abstract: Results are presented from studies of the enthalpy and heat conductivity of niobium carbide with various relationships of Nb and C. Measurements were performed by the method of mixing in the 300-3500° K temperature interval. Equations are given for description of the dependence of enthalpy and heat capacity on temperature. The error in measurement of enthalpy is ±1.5%. The authors explain the divergence of their data with the data of earlier authors primarily as a result of differences in free-carbon content of the specimens tested.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

UDC 536.63:536.722

SHEYNDLIN, A. YE., BELEVICH, I. S., and KOZHEVNIKOV, I. G., Institute of High Temperatures, Academy of Sciences USSR

"Enthalpy and Specific Heat of Boron Carbide in the 273-2600° K Temperature Range"

Moscow, Teplofizika Vysokikh Temperatur, No 2, 1972, pp 421-423

Abstract: The article describes results of a study of the enthalpy and specific heat of boron carbide by the mixing method. The initial composition of the boron carbide samples was 76.4 percent $B_{comb.}$, 21.26 percent $C_{tot.}$, 3.32 percent C_{free} and 2.29 percent impurities (0.71 percent Ca + 0.39 Mg + 0.28 Si + 0.91 percent R_2O_3). An analysis of experimental data shows that boron carbide is characterized by a complex temperature dependence of specific heat and enthalpy. The mean specific heat increases rapidly with a temperature change from room temperature to ~ 1100° K, and its dependence on T in the 1300-1900° K range is close to linear. At T > 2100° K the variation of these properties can be described by an exponent. An additional series of experiments performed to reduce the effect of random measurement errors at

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USSR

SHEYNDLIN, A. YE., et al., Teplofizika Vysokikh Temperatur, No 2, 1972, pp 421-423

temperatures above 2100° K, where a significant increase in the specific heat of boron carbide is observed, confirmed the character of the temperature dependence of calorific properties.

Experiments were also staged to determine the melting temperature of boron carbide in a furnace with a graphite heater in a pure argon atmosphere. At temperatures above 2650° K it was found that the samples lost mass, and a change of composition took place in the material. Boron carbide melt thrown into a cold calorimeter congealed in the form of spherules with a smooth surface and a large number of internal pores. Chemical analysis showed that samples heated to 2675° K contain 29.05 percent $C_{tot.}$ and 66.43 percent B; completely fused drops of a sample, 49.61 percent $C_{tot.}$ and 45.26 percent B. The greater part of the impurities is iron, which apparently appeared during the preparation of samples from this very hard carbide. The melting temperature of boron carbide obtained under these conditions is 2713±20° K. In some experiments where direct contact of a sample with the graphite was permitted,

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

SHEYNDLIN, A. YE., et al., Teplofizika Vysokikh Temperatur, No 2, 1972, pp 421-423

samples melted at a lower temperature equal to 2620° K. Results of chemical analysis and visual observations indicate that dissociation of the material and evaporation of boron take place in boron carbide samples near the melting point, as a result of which the congealed melt represents an extremely porous mass with a significant boron deficiency as compared to the initial composition.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

1/2 055 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--POSSIBILITIES FOR USING GAS TURBINE ASSEMBLIES AND MAGNETOHYDRODYNAMIC GENERATORS IN A NUCLEAR POWER STATION WITH HIGH
AUTHOR-(04)-MILLIONSHCHIKOV, M.D., LYULKA, A.M., NEDOSPASOV, A.V., SHEYNDLIN, A.YE.
COUNTRY OF INFO--USSR

SOURCE--TOPLOFIZ. VYS. TEMP. 1970, 8(2), 379-93

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--GAS TURBINE, MAGNETOHYDRODYNAMICS, NUCLEAR POWER PLANT, MHD GENERATOR, GAS COOLED NUCLEAR REACTOR/(U)3000MW REACTOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0569 STEP NO--UR/0294/70/008/002/0379/0393

CIRC ACCESSION NO--AP0137674
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2/2 055 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137674

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERMODYNAMIC EFFICIENCIES (ECONOMICS) AND REDUCED LEVELS OF THERMAL POLLUTION ATTAINABLE IN HE GAS COOLED REACTORS COUPLED TO GAS TURBINES OR MAGNETOHYDRODYNAMIC (MHD) GENERATORS ARE DISCUSSED. GAS TURBINE DESIGNS, THEIR COUPLING TO 1200-MW REACTORS, THEIR OPERATION AT 850, 950, AND 1200DEGREES, AND THEIR EFFICIENCIES OF 46.2-54.5PERCENT ARE COMPARED AND ARE DISCUSSED IN RELATION TO COUNTERFLOW AND CROSS FLOW REGENERATOR CHARACTERISTICS. THE CHARACTERISTICS AND EFFICIENCIES OF CARBIDE FUELED 3000-MW REACTORS COUPLED TO MHD GENERATORS OPERATING ON AR-CS OR HE-CS MIXTS. AT GAS COUTLET TEMPS. OF 1733-1973DEGREESK AND REACTOR PRESSURES OF 5-50 ATM ARE DISCUSSED. AN EFFICIENCY OF 57-9PERCENT WAS CALCD. FOR A 3000-MW MHD COUPLED REACTOR OPERATING AT A GAS OUTLET TEMP. OF 2273DEGREESK AT A HEAT RECOVERY OF 90-3PERCENT; INCREASING THE INLET PRESSURE FROM 30 TO 60 ATM REDUCED CAPITAL INVESTMENTS BY SIMILAR TO 25PERCENT AND THE COST PER KW-HR BY SIMILAR TO 11PERCENT.

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USSR

MILLIONSHCHIKOV, M. D., LYUL'KA, A. M., NEDOSPASOV, A. V., SHEYNDLIN, A. YE.

"Possibilities of Using Gas Turbines and Magnetogas-Dynamic Generators at Atomic-Electric Power Plants with High-Temperature, Gas-Cooled Reactors"

Moscow, Teplofizika Vysokikh Temperatur, Vol 8, No 2, March-April 1970, pp 379-393

Abstract: This article describes an investigation of the possibilities of atomic-electric power plants with gas turbines and magnetogas-dynamic generators, using as examples preliminary designs of 1,200-megawatt power units. Although power units of this type will not be built in the near future, selection of them for this study has permitted not only evaluation of the technical parameters of the plants but also their basic economic indexes. The article is based on a report presented at the meeting of the magnetogas-dynamic generator group under the International Atomic Agency in Paris, January 1970.

The article contains discussions of the thermal circuit and basic elements of atomic-electric power plants with gas-cooled reactors and closed gas turbines, the equipment composition of these plants, design principles for plasma magnetogas-dynamic generators for electric power plants, the thermal circuit of atomic-magnetohydrodynamic electric power plants with steam turbine compressor drive, and

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USSR

MILLIONSHCHIKOV, M. D., et al., Teplofizika Vysokikh Temperatur, Vol 8, No 2, March-April 1970, pp 379-393

the layout of an atomic-magnetohydrodynamic-electric power plant with a 2,000°C reactor and gas turbine. Economic indexes showing the cost of electric power and specific calculated expenditures of atomic-electric power plants with gas turbines and magnetogas-dynamic generators based on the 1980-1985 price level are tabulated. The tabulated data shows that atomic power plants with gas-cooled reactors have better over-all technical and economic indexes than plants using organic fuel. The specific annual expenditures of the atomic electric power is 2-3 times lower. The specific capital investments in equipment are approximately the same for steam power plants using organic fuel and for atomic-electric power plants with gas turbines at 650°C or for magnetogas-dynamic generators at 1,700°C. It is concluded that even the simplest atomic-electric power plants with gas turbines at temperatures of 850°C cannot be put into operation in less than ten or fifteen years.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

UDC 536.24

ANTONOV, I. N., SHEYNESSON, A. S., BARSKIY, M. L.

"Role of Radiant and Convective Components in the Heat Exchange of Radiometers"

V sb. Prikl. i teor. fizika. Vyp. 3 (Applied and Theoretical Physics. No. 3 -- Collection of Works), Alma-Ata, 1972, pp 257-262 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B914)

Translation: Methods, computational results and a comparative evaluation of the radiant, convective, and total coefficients of heat exchange of the surfaces of a radiometer of cylindrical shape are discussed. The results make it possible to determine the average heating of the instrument relative to the surrounding medium and to evaluate the role of radiant and convective components in the total balance of heat exchange under various meteorological conditions. Detailed quantitative characteristics are given. Authors' abstract.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

UDC 541.182.644:541.183.7

SHEYNFAYN, R. YU., STAS', O. P., and NEYMARK, I. YE.

"Synthesis and Adsorption Properties of Mixed Adsorbents of the Type Silica gel -- Zeolite"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 45, No 10, Oct 72, pp 2192-2195

Abstract: In studying the adsorption properties of the zeolite-silica gel type sorbents in relationship to their composition and methods of preparation, it was established that the mutual effect of both components of the mixture results in a deviation from additive value in the area of capillary vapor condensation. Macropores are formed when silica gel is brought in contact with zeolite. The volume of the macropores increases with increased quantity of the zeolite added. A method for the preparation of mixed absorbents with different porous structures was developed based on mixing zeolite with aerosilo gel. The zeolite-silica gel obtained in this manner shows a bidispersive structure.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

1/2 011 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--ON THE MECHANISM OF POROUS STRUCTURE FORMATION IN SILICA GELS, EFFECT OF SILICIC ACID HYDROGEL AGEING IN ORGANIC SOLVENST ON THE

AUTHOR-(03)-SHEYNFAYN, R.YU., STAS, O.P., NEYMARK, I.YE.

COUNTRY OF INFO--USSR

SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 3, PP 451-453

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--POROSITY, SILICA GEL, ORGANIC SOLVENT, GEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2139 STEP NO--UR/0069/70/032/003/0451/0453

CIRC ACCESSION NO--AP0125722

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

2/2 011 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0125722

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOLUTIONS OF WATER SOLUBLE ORGANIC SOLVENTS HINDER THE AGEING OF SILICI ACID HYDROGEL. UNLIKE WATER, ORGANIC MEDIUM INHIBITS THE GROWTH OF HYDROGEL PARTICLES. THIS RESULTS IN XEROGELS WITH HIGHLY DEVELOPED SURFACE AREA CORRESPONDING TO THE SIZE OF FRESHLY PRECIPITATED HYDROGEL PARTICLES. STABILIZATION OF PARTICLES IS ACCOUNTED FOR BY THE FORMATION AROUND THEM OF ADSORPTION SOLVATION SHEATHS FROM ORGANIC MOLECULES WHICH HINDER THEIR GROWTH.

FACILITY: INSTITUT FIZICHESKOY KHIMII AN USSR, KIEV.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

Acc. Nr:
AP0036536 S Ref. Code: UR 0069
PRIMARY SOURCE: Kolloidnyy Zhurnal, 1970, Vol 32, Nr 1, pp 104-108

ON THE MECHANISM OF POROUS STRUCTURE FORMATION IN SILICAGEL

CHANGE IN POROUS STRUCTURE OF SILICA GEL UNDER THE ACTION OF HYDROFLUORIC ACID AT THE HYDROGEL AGEING STAGE

Stas', O. P.; Shevnfayn, R. Yu.; Neymark, I. Ye.

Summary

New possibilities have been found for the porous structure control in silica gels by treating hydrogel with HF. With higher HF concentrations and longer ageing times of hydrogel in it, the pore volume of silica gel increases and its surface area diminishes. A certain similarity has been discovered in the effect of HF and hydroxyl ions concentration on hydrogel ageing, viz. that the porous structure changes in xerogels obtained in the two cases are similar.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

UDC 533.6.013.42

SHEYNIN, I. S., ZABOLOTNAYA, V. A.

"Vibrations of a Vertical Wall in a Compressible Fluid With a Density Variable Over Depth"

V sb. Dinamika gidrotekhn. sooruzh. (Dynamics of Hydraulic Engineering Equipment -- Collection of Works), Moscow, 1972, pp 92-96 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V400)

Translation: Small vibrations of a vertical wall located in an ideal compressible nonhomogeneous liquid with a density varying with height are discussed. Wave action on the free surface is not taken into account. The method of separation of variables is used. Graphs are given showing the coefficients of connected mass and the "connected resistance" as functions of frequency under vibrations of a rigid wall. The resulting values of the coefficients under an exponential change in the density of the liquid over height are compared with corresponding parameters calculated for a constant value of the density. Ye. A. Vol'mir.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

UDC: 624.131.531.5

SHEYNIN, V. I. and BIRYUKOV, S. K.

"Load Distribution in Multi-Support Underground Structures where the Supports Have Differing Characteristics"

Moscow, Osnovaniya, fundamenty i mekhanika gruntov, No 3, 1971, pp 22-24

Abstract: The authors solve a problem associated with load distribution on elastic supports which lie between basement rock and ponderable, higher lying elastic rock masses. An instance is considered where the rigidity, width of supports, and the distance between supports can be varions. The load applied to the boundaries of the elastic masses is represented in the form of a Fourier transform. The equations for determining loads are found on the basis of geometric conditions and are supplemented by an equilibrium equation. An M-220 electronic computer using a specially prepared program was used to verify the accuracy of the proposed solution. Original article: two tables, one figure, 17 formulas, and six bibliographic entries.

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AN0026668

S UR9003

TITLE-- ANNOUNCEMENT OF THE COMMITTEE ON THE LENIN AND STATE PRIZES

NEWSPAPER-- IZVESTIYA, FEBRUARY 18, 1970, P 3, COLS 1-5

ABSTRACT-- THE COMMITTEE ON THE LENIN AND STATE PRIZES HAS ANNOUNCED THE NAMES OF RESEARCHERS ADMITTED TO THE 1970 LENIN PRIZE COMPETITIONS. THE LIST INCLUDES G. V. NOVOZHILOV, YA. A. KUTEPOV, V. I. SMIRNOV, D. V. LESHCHINER, V. M. SHEYNIN, AND A. A. OVCHAROV FOR THEIR "DEVELOPMENT OF THE INTERCONTINENTAL PASSENGER AIRLINER IL-62", AND A. S. YAKOVLEV, YE. G. ADLER, M. G. BENDERSKIY, K. M. VALIK, AND K. S. KIL'DISHEVA FOR "JET PASSENGER AIRLINER YAK-40 POWERED BY THREE AI-25 ENGINES".

BOTH CANDIDATES WERE NOMINATED BY THE MINISTRY OF AVIATION INDUSTRY.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR UDC 541.127:547.486.41

RIZAYEV, R. G., SHEYNIN, V. Ye., MEKHIYEV, S. D., and GEYDARLY, N. I.

"Investigation of the Kinetics of Ammonolysis of m-Xylene by a Gradientless Method"

Baku, Azerbaydzhanskiy Khimicheskiy Zhurnal, No 3 (69), 1970, pp 29-32

Abstract: In this paper the authors study the kinetics of ammo-oxidation of m-xylene over a vanadium oxide catalyst (6% V_2O_5 and 2% MoO_3) applied to calcined aluminum oxide in a system with continuous circulation. To determine the fraction of homogeneous reaction, noncatalytic experiments were conducted under conditions similar to the catalytic experiments. More than 90% of the m-xylene was unreacted. Use of the gradientless method made it possible to find the reaction rates in differential form. After the onset of the steady state, the reaction rate was determined from the formula $\omega = n/G \cdot \Delta t$, where n is the number of moles of reacted or formed products in time Δt, G is the amount of catalyst in grams, and Δt is the time from the instant of the onset of the steady state in hours. The effect which the concentrations of O_2 and NH_3 have on the bulk conversion of m-xylene, and on the rate of formation of main products and byproducts of the reaction was studied. It was found that

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USSR

RIZAYEV, R. G., et al, Azerbaydzhanskiy Khimicheskiy Zhurnal, No 3 (69), 1970, pp 29-32

in the region of partial pressures $O_2 > P_{O_{2_{min}}}$ and $NH_3 > P_{NH_{3_{min}}}$, a zero kinetic order is observed with respect to O_2 and NH_3.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

UDC 632.95

TALIPOV, Sh. T., DZHIYANBAYEVA, R. Kh., KHALIMOVA, U. Kh., BELOBORODOVA, N. F., SHEYNINA, R. I.

"Analysis of Butyphos in Cotton Seed and Products of Refining Raw Cotton"

Maslo-zhir. prom-st' (Oil and Fats Industry), 1972, No 10, pp 33-34 (from RZh-Khimiya, No 2 (II), Feb 73, Abstract No 2N478)

Translation: In order to determine the butyphos residue in raw cotton, fiber, shells and the refined cotton seed oil, extraction by an organic solvent (for cotton seed oil, MeCN and for the other samples, CCl_4) and purification of the extract in a column filled with Al_2O_3 with SG KSK [expansion unknown] (3:1) [the sorbent was first treated with HCl (acid)] were carried out. Thin layer chromatography was performed using a fixed layer of SG in the n-hexane-acetone system (4:1). It was developed with a solution of Ac-OH. The sensitivity of the method when analyzing butyphos in raw cotton and fiber is 0.1 mg/kg; in the hulls it is 0.6 mg/kg and in the refined cotton seed oil, 1 mg/kg.

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USSR

UDC 543.8

SHEYNINA, R. I., DZHIYANBAYEVA, R. Kh., KHALIMOVA, U. Kh., TALIPOV, Sh. T., and IBRAIMOV, Ch. I., Tashkent State University imeni V. I. Lenin and the Middle Asia Branch of the All-Union Scientific Research Institute of Fats, Tashkent

"Kinetic Method for Determining Microgram Quantities of the Organophosphorus Compound Butifos"

Moscow, Zhurnal Analiticheskoy Khimii, Vol 27, Vyp 8, 1972, pp 1643-1647

Abstract: Microgram quantities of butifos can be determined from its catalytic properties on the oxidation of benzidine, o-dimethoxybenzidine, and dimethylbenzidine by H_2O_2. The reaction is following photometrically. The dimethylbenzidine reaction is the most sensitive of the indicators as the methyl groups are stronger electron donors than the methoxy group. Conditions optimizing the reaction are examined. Trace amounts of butifos in the fibers and husks of cotton seeds were determined by this method.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

UDC 632.95

SHEYNINA, R. I., TALIPOV, SH. T., DZHIYANBAYEVA, R. KH., KHALIMOVA, U. KH.

"Methods of Analyzing Microgram Amounts of Butyphos in Some Products of Industrial Processing of Cotton"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov i profilakt. zagryaz-neniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on the Investigation of Pesticide Residues and Preventive Contamination of Food Products, Feeds and Environment), Tallin, 1971, pp 376-380 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N500)

Translation: For analysis of butyphos (I) in raw cotton and cotton fiber, the property of I to accelerate the oxidation of o-dianisidine by H_2O_2 and retard the oxidation of hydroquinone by H_2O_2 in the presence of Cu^{2+} is used. The concentration of I in the $1.25\text{-}6.25 \cdot 10^{-2}$ $\gamma/m\ell$ range is determined by measuring the rate of one reaction, and the concentration of I to 10^{-4} $\gamma/m\ell$ by measuring the rate of the second reaction. The reaction rate is determined by the fixed time method, measuring the optical density of these solutions 20 minutes after mixing the solutions in the first case and 5 minutes after in the second case.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

UDC 543.544

TALIPOV, SH. T., DZHAYANBAYEVA, R. KH., KHALIKOVA, U. Kh., BELOBORODOVA, N. F., and SHEYNINA, R. I., Tashkent State University imeni V. I. Lenin

"Thin-Layer-Chromatographic Determination of Butyphos in Cottonseed Oil"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 9, No 4 (90), 1971, p 20

Abstract: KSK silica gel was used for determination of butyphos in cottonseed oil, it is more selective than alumina. Butyphos was extracted from cottonseed oil with acetonitrile, passed through a 3:1 column of alumina:silica gel and chromatographed in the system n-hexane-acetone (4:1). The spots were developed with 0.05% bromphenol blue; impurities do not show up in this system.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

1/2 010 UNCLASSIFIED PROCESSING DATE--11SEP7(

TITLE--REACTION OF N,ACYLISOQUINOLINIUM SALTS WITH PYRROLES -U-

AUTHOR--SHEYNKAAN, A.K., DEYKALO, A.A.

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSKIKL. SOEDIN. 1970, (1), 126-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PYRROLES, MOLECULAR STRUCTURE, THIN LAYER CHROMATOGRAPHY, CHLORINATED ORGANIC COMPOUND, CHEMICAL SYNTHESIS, CRYSTALLIZATION, CHEMICAL SEPERATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1049 STEP NO--UR/0409/70/000/001/0126/0127

CIRC ACCESSION NO--AP0104447

UNCLASSIFIED

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

2/2 010 UNCLASSIFIED

CIRC ACCESSION NO--AP0104447 PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICROFICHE OF ABSTRACT CONTAINS GRAPHIC INFORMATION. REACTION OF PYRROLES AND ISOQUINOLINE IN THE PRESENCE OF ACYL HALIDES WAS STUDIED AT 25-50DEGREES. PRODUCTS I AND II (3:4 RATIO) PREPD. IN 50-70PERCENT YIELD WERE SEPD. BY FRACTIONAL CRYSTN. FROM ET SUB2 O OR BY PREPARATIVE THIN LAYER CHROMATOG. ON AL SUB2 O SUB3 (C SUB6 H SUB6-C SUB6 H SUB14-CHCL SUB3, 6:1:30). THUS WERE PREPD. I (R PRIME1, R PRIME2, PERCENT YIELD, M.P., LAMBDA MAX., AND LOG EPSILON, GIVEN): PH, H, , 136-7DEGREES, 235 MMU, 4.85, 265 MMU, 4.83; 2,FURYL, H, , 125-6DEGREES, 235 MMU, 4.27, 260 MMU, 4.23, 315 MMU, 4.19; PH, PH, 88, 149-50DEGREES (ETOH), 300 MMU, 4.11. ALSO PREPD. WERE II (R, M.P., LAMBDA MAX., AND LOG EPSILON GIVEN): PH, 197-8DEGREES, 235 MMU, 5.27, 275 MMU, 5.40; 2,FURYL, 170-1DEGREES, 235 MMU, 4.49, 265 MMU, 4.55, 315 MMU, 4.50. ALSO PREPD. WERE III (R PRIME3, PERCENT YIELD, AND M.P. GIVEN): PH, 67, 242-3DEGREES.

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APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9"

"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

1/2 020 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--STRUCTURE AND TAUTOMERISM OF O,HYDROXYALDEHYDE ANILS STUDIED BY AN INFRARED SPECTROSCOPIC METHOD -U-

AUTHOR--MINKIN, V.I., OSIPOV, O.A., SHEYNKER, V.N.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 23-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IR SPECTRUM, SPECTROSCOPIC ANALYSIS, MOLECULAR STRUCTURE, ALDEHYDE, HYDROXYL GROUP, AMINE DERIVATIVE, IMINE, BENZENE DERIVATIVE, STEREOCHEMISTRY, TAUTOMERISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1044 STEP NO--UR/0076/70/044/001/0023/0028

CIRC ACCESSION NO--AP0104442

UNCLASSIFIED

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

2/2 020 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104442

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IR SPECTRA OF PHN:CHAR (I) AND PH PRIMEIS N:CHAR WERE MEASURED IN THE SOLID STATE AND IN CCL SUB4, DIOXANE, AND CHCL SUB3 (AR EQUALS PH, O-HOC SUB6 H SUB4 (II), 3,HYDROXY,2,NAPHTHYL (III), 2,METHOXY,1,NAPHTHYL, 2,HYDROXY,1,NAPHTHYL (IV), 1,HYDROXY,2,NAPHTHYL (V), AND 2,HYDROXY,1,ANTHRYL (VI)) (NU(AR) AND NU(C:N) ARE GIVEN IN A TABLE). VALENCE VIBRATION OF THE C:N BOND IS COMPLEX AND GIVES 2 ABSORPTION BANDS. THE RESULTS CONFIRM THE EXISTENCE OF BENZENOIDQUINONOID TAUTOMERISM FOR SOLNS. OF I (AR EQUALS IV, V), AND PROVE THE ENOL IMINE STRUCTURE FOR I (AR EQUALS II, III) AND KETO AMINE STRUCTURE FOR I (AR EQUALS VI, AND 9,HYDROXY,IO,PHENANTHRYL).

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

UDC 616-097+612.071-11/12

KONSTANTINOVA, I. V., ZAZHIREY, V. D., and SHEYNKER, V. Sh., Institute of Medical Biological Problems, Ministry of Health USSR, and Institute of Human Morphology, Academy of Medical Sciences USSR, Moscow

"Investigation of the Effect of Ribonuclease on the Synthesis of Antibodies During Secondary Immunological Response in Vitro and in Vivo"

Moscow, Doklady Akademii Nauk SSSR, Vol 199, No 4, 1971, pp 948-951

Abstract: The study included 480 in vitro tests in which spleen slices obtained from BCE-vaccinated mice and rabbits were incubated with ribonuclease (with protamine sulfate in control tests), H^3-uridine and H^3-thymidine. In addition, 86 in vivo tests were conducted in which mice vaccinated with Vi-antigen, BCE (Bacillus Colnbrook England), and diphtheria toxoid were given daily intravenous or intraperitoneal injections of ribonuclease for five days, and then vaccinated for the second time. Subsequent analysis revealed that ribonuclease in small concentrations stimulated antibody synthesis in vitro and in vivo. In the cultures, enhanced synthesis of ribonucleic acids in lymphocytes and proliferation of reticular cells were also observed. In higher contentrations, the enzyme exerted inhibitory effects which were reversed after the excess ribonuclease was washed out. It is believed that
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USSR

KONSTANTINOVA, I. V., et al., Doklady Akademii Nauk SSSR, Vol 199, No 4, 1971, pp 948-951

the mechanism of action of ribonuclease is either direct or associated with degradation of ribonucleic acids in dying cells and the products of this hydrolysis -- mono-oligonucleotides -- which regulate cellular metabolism and are reutilized in biosynthesis.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

UDC 547.759.3:543.422.25

DVORYANTSEVA, G. G., UL'YANOVA, T. N., SHEYNKER, Yu. N., and YAKHONTOV, L. N., All-Union Scientific Research Chemico-Pharmaceutical Institute imeni S. Ordzhonikidze, Moscow

"Study by the PMR Method of the Protonation of Derivatives of 5-Azaindole"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 6, Jun 73, pp 767-772

Abstract: The protonation of 5-azaindole (I), 5-azaindoline (II), 1-phenyl-5-azaindole (III), 1-phenyl-5-azaindoline (IV), 1-acetyl-5-azaindoline (V), and 4-aminopyridine (VI) by trifluoroacetic acid in solutions with various dielectric constants was studied by the PMR method. Protonation took place at 5-N in the pyridine ring. Spin-spin interaction with 1-N - H was indicated by the PMR spectrum of the monocation of VI. In the monocations of I, II, III, and IV there was a considerable contribution of a quinoid structure with a transfer of the positive charge to N of the pyrrole ring. On the basis of the relations between the chemical shifts of protons of III and IV and the concentration of trifluoroacetic acid in methylene chloride, acetonitrile, and deuteracetone, a mechanism of protonation is proposed according to which the transfer of a proton from the donor to the acceptor in solvents with a low polarity takes place over an initially formed base-acid complex to which hydrogen is bound.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

UDC 547.834.4+541.634

MIKHLINA, YE. YE., YANINA, A. D., ALEKSEYEVA, L. M., TURCHIN, K. F., SHEYKER, YU. N., YAKHONTOV, L. N., DYUK, R. F., RICHARD, A. YA., and KATRITSKIY, A. R., All-Union Scientific Research Pharmaceutical Chemical Institute imeni S. Ordzhonikidze, Moscow and Chemistry Department, University of East Anglia at Norwich, Great Britain

"Reaction of Benzo [b]quinuclidine with Electrophilic Reagents"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, Academy of Sciences Latvian SSR, No 3, 1971, pp 385-388

Abstract: Electrophilic substitution of benzo [b] quinuclidine (I) was studied: bromination, nitration, and sulfochlorination. These results are closely related to the absence of p-π electron interaction in I. When I is brominated in several different solvents (acetic acid, chloroform) at 0, 20, and 60° (with or without catalysts), only the perbromide of I and a molecular complex of I with bromine were obtained. The absence of the p-π mesomeric effect in I is shown by its pK. In contrast to bromination, nitration and sulfochlorination of I form products of electrophilic substitution. When I is treated with a nitrating mixture at temperatures from -4 to -7°, mononitrobenzo [b] quinuclidine is formed. When I is treated with chlorosulfonic acid, first at 0° and then at 50°, benzo [b]quinuclidine-sulfonyl chloride is formed.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

UDC 547.539.131

KONDRATENKO, N. V., SYROVA, G. P., POPOV, V. I., SHEYNKER, Yu. N., and YAGUPOL'SKIY, L. M., Institute of Organic Chemistry, Academy of Sciences, Ukrainian SSR

"Aryltrihalosilanes and Germanes. σ Constants of Trihalosilyl and -Germyl Groups

Leningrad, Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 2056-2060

Abstract: The synthesis of fluorobenzene derivatives with $SiHlg_3$ and $GeHlg_3$ substituents where Hlg=F, Cl and Br is described and the σ constants of these groups determined. It was found that the induction effect increases in the series of substituents $CHlg_3<SiHlg_3<GeHlg_3$ with an increase in the electron donor capacity of the central atom to the halide atoms. The $SiHlg_3$ and $GeHlg_3$ hardly differ with respect to the conjugation effect, but they both excel the acceptor effect of the corresponding $CHlg_3$ groups. The regularities in changes in the σ_e constant value are attributed to the participation of silicon and germanium atoms in $d_\pi-p_\pi$ conjugation. The yields, physical constants and analytical results of the obtained compounds are presented in a table.
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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

UDC 547.822.7.07

NIKITSKAYA, YE. S., ALEKSEYEVA, L. M., SHEYNKER, YU. N., and YAKHONTOV, L. N., All-Union Scientific Chemical-Pharmaceutical Research Institute imeni S. Ordzhonikidze, Moscow

"Synthesis of N'-Substituted 4-Aminopiperidines With a Shielded Nitrogen Atom"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 12, Dec 71, pp 1672-1678

Abstract: A detailed study was carried out of the triacetoneamine cyanohydrine (I) reaction with ammonia and various amines. It has been shown that (I) reacts with fatty and aromatic amines in methanol at 0-20°C yielding respective 2,2,6,6-tetramethyl-4-cyano-4-amino piperidines (II). Aromatic amines do not react under these conditions. The α-aminonitriles (II) are thermally unstable, and when heated above 50°, they split HCN, forming tetramethylpiperidines. Decyanation of (II) occurs also easily when these compounds are reduced with $LiAlH_4$, yielding pure N'-substituted-2,2,6,6-tetramethyl-4-aminopiperidines (III). Reacted with formic acid and formalin, (III) are easily methylated at the piperidine nitrogen atom. In cases where the exocyclic nitrogen atom happens to be a secondary amine, it also becomes methylated. The products -- N',N-disubstituted 1,2,2,6,6-pentamethyl-4-aminopiperidines are strong bases; they give stable dihydrochlorides.

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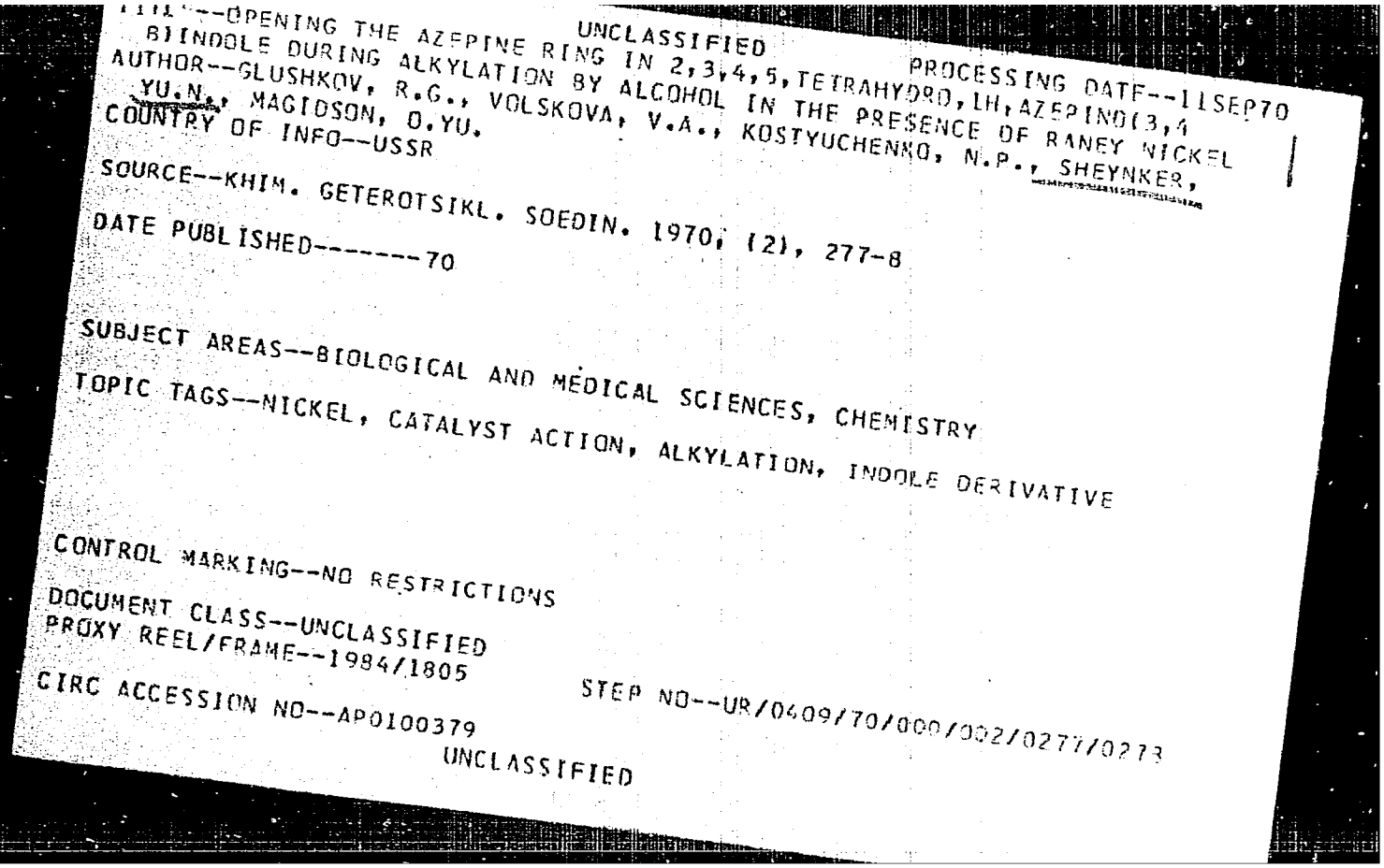

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TITLE--OPENING THE AZEPINE RING IN 2,3,4,5,TETRAHYDRO,1H,AZEPINO(3,4 B)INDOLE DURING ALKYLATION BY ALCOHOL IN THE PRESENCE OF RANEY NICKEL

AUTHOR--GLUSHKOV, R.G., VOLSKOVA, V.A., KOSTYUCHENKO, N.P., SHEYNKER, YU.N., MAGIDSON, O.YU.

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (2), 277-8

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY

TOPIC TAGS--NICKEL, CATALYST ACTION, ALKYLATION, INDOLE DERIVATIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/1805

STEP NO--UR/0409/70/000/002/0277/0278

CIRC ACCESSION NO--AP0100379

UNCLASSIFIED

PROCESSING DATE--11SEP70

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9"

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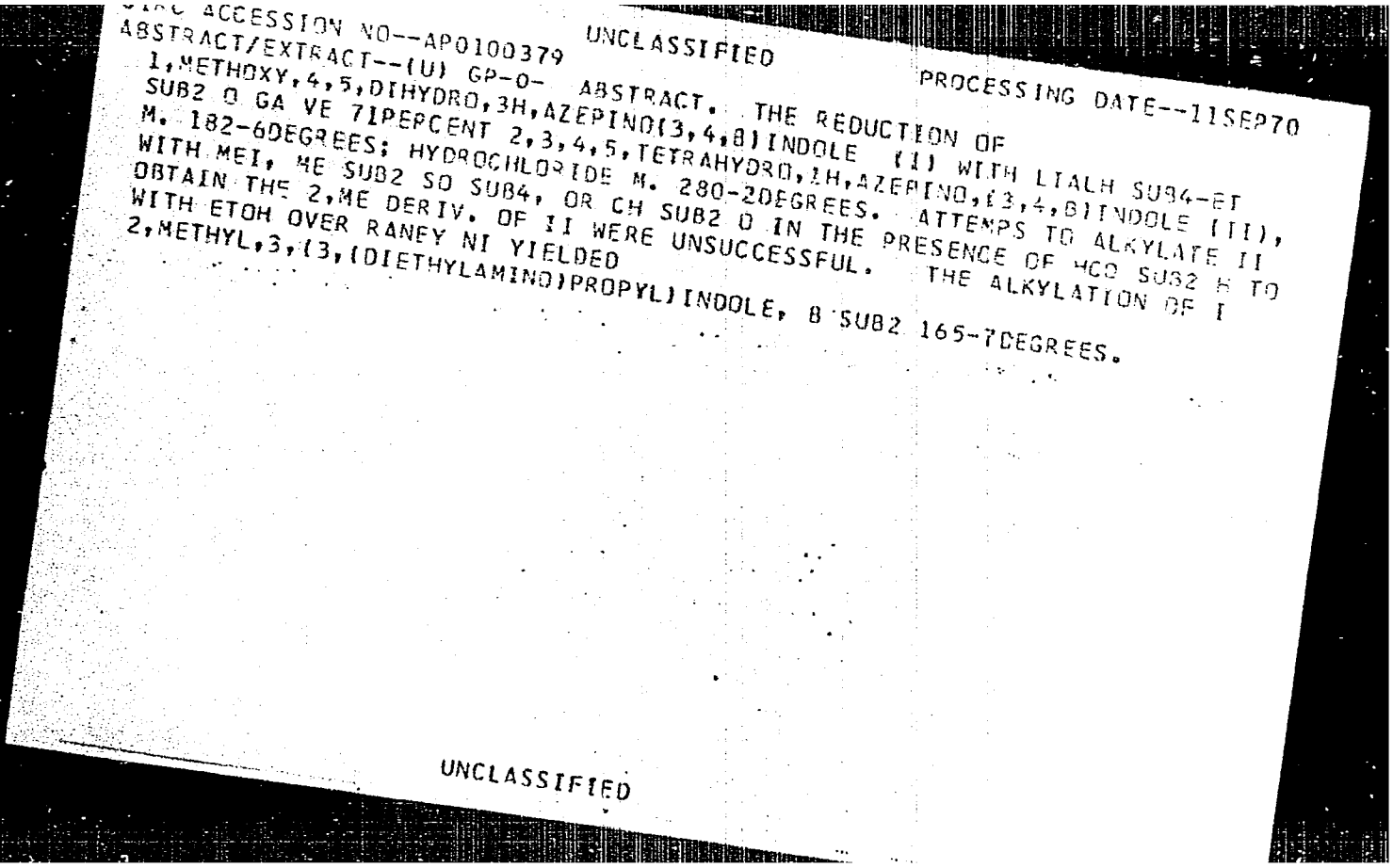

UNCLASSIFIED

PROCESSING DATE--11SEP70

ACCESSION NO--AP0100379

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REDUCTION OF 1,METHOXY,4,5,DIHYDRO,3H,AZEPINO(3,4,8)INDOLE (I) WITH LIALH SUB4-ET SUB2 O GA VE 71PERCENT 2,3,4,5,TETRAHYDRO,1H,AZEPINO,(3,4,8)INDOLE (II), M. 182-6DEGREES; HYDROCHLORIDE M. 280-2DEGREES. ATTEMPS TO ALKYLATE II WITH MEI, ME SUB2 SO SUB4, OR CH SUB2 O IN THE PRESENCE OF HCO SUB2 H TO OBTAIN THE 2,ME DERIV. OF II WERE UNSUCCESSFUL. THE ALKYLATION OF I WITH ETOH OVER RANEY NI YIELDED 2,METHYL,3,(3,(DIETHYLAMINO)PROPYL)INDOLE, B SUB2 165-7DEGREES.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

UDC 547.785.5'741

KOCHERGIN, P. M., SHEYNKER, YU. N., DRUZHININA, A. A., PALEY, P. M. and ALEKSEYEVA, L. M., All Union Scientific Chemical-Pharmaceutical Institute imeni S. ORDZHONIKIDZE, Moscow

"Studies in the Imidazole Series. LVIII. Debenzylation of N-Benzyl-substituted 1H-Pyrrolo [1,2-a]imidazole and 4H-Pyrrolo [1,2-a]benzimidazole"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 6, Jun 71, pp 826-830

Abstract: Debenzylation of N-benzylsubstituted 1H-pyrrolo-[1,2-a] imidazole and 4H-pyrrolo [1,2-a]benzimidazole by the action of sodium in liquid ammonia was studied. Using IR and NMR spectral analysis it was shown that the products are derivatives of 7H-pyrrolo-[1,2-a]imidazole and 3H-pyrrolo[1,2-a]benzimidazole. Debenzylation of 2,3-diphenyl-4-benzylpyrrolo[1,2-a]benzimidazole takes place with concurrent reduction of the pyrrole ring forming 1H-2,3-dihydro-2,3-diphenylpyrrolo[1,2-a]benzimidazole, m.p. 193-194°.

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"APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920014-9

USSR

UDC 615.277.3

PERSIANOVA, I. V., and SHEYNKER, Yu. N., All Union Chemical-Pharmaceutical Scientific Research Institute imeni S. Ordzhonikidze, Moscow

"The Rate of Hydrolytic Splitting of the Ethylenimine Cycles of Diethyleniminophosphorylaminopyrimidines and Their Antiblastic Activity"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 4, No 12, Dec 70, pp 33-36

Abstract: The rate of hydrolysis of diethyleniminophosphorylaminopyrimidines was compared to the antitumor activity and toxicity. The hydrolysis was carried out at pH 4.0, 37°C, in physiological solution, using a $5 \cdot 10^{-4}$ mole/l concentration of the experimental compound. Rat sarcoma 45 was used as the model tumor. It was found that in the series of 2-(diethyleniminophorylamino)-pyrimidine a close parallel relationship exists between the rate of hydrolysis, toxicity, and antitumor activity; the later passing a maximum at one point, then going in the opposite direction to hydrolysis. On the other hand, the rate of hydrolysis showed no effect on the activity of the 4-(diethyleniminophosphorylamino)-pyrimidine derivatives.

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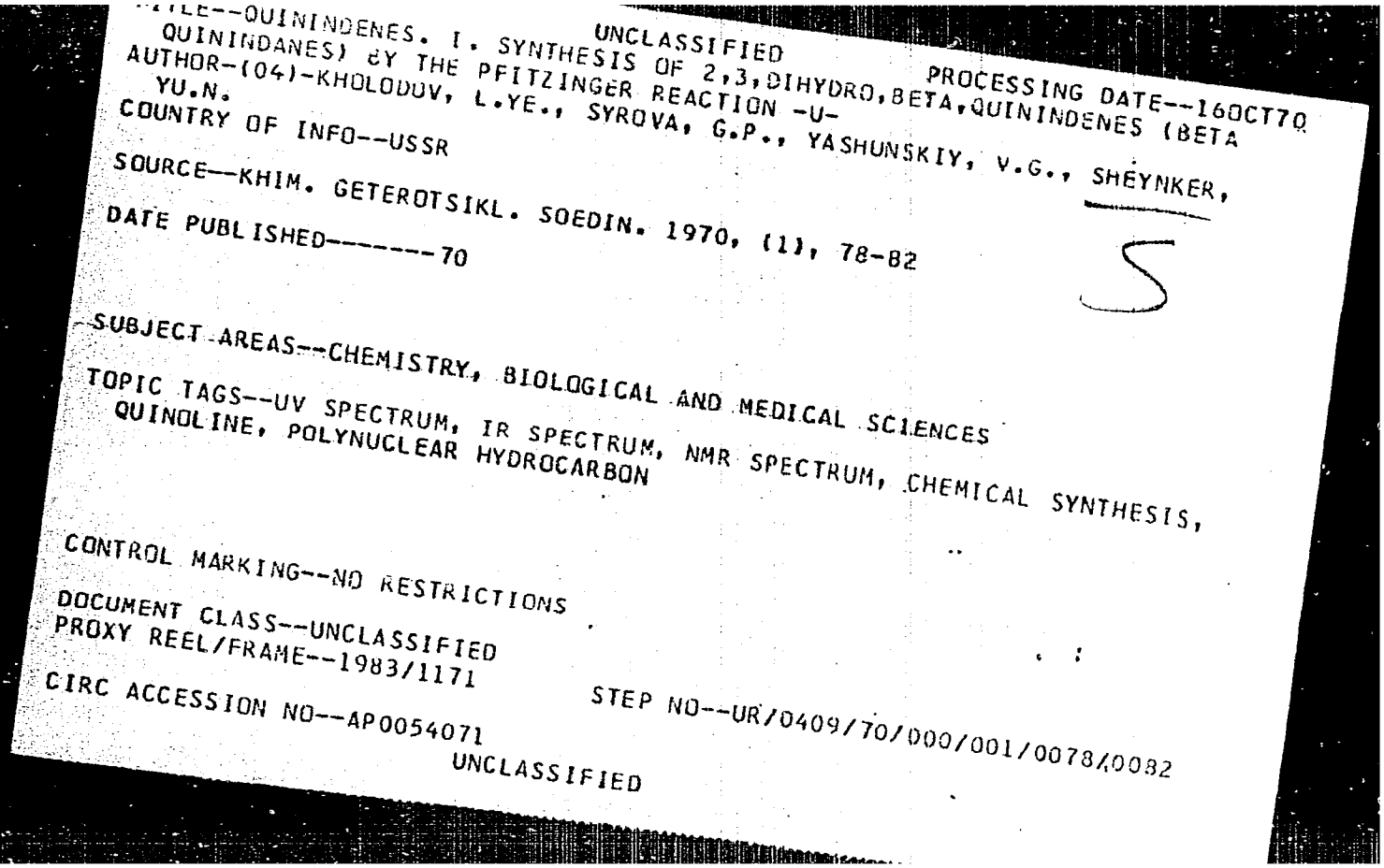

UNCLASSIFIED

TITLE--QUININDENES. I. SYNTHESIS OF 2,3,DIHYDRO,BETA,QUININDENES (BETA QUININDANES) BY THE PFITZINGER REACTION -U-

PROCESSING DATE--16OCT70

AUTHOR-(04)-KHOLODOV, L.YE., SYROVA, G.P., YASHUNSKIY, V.G., SHEYNKER, YU.N.

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (1), 78-82

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--UV SPECTRUM, IR SPECTRUM, NMR SPECTRUM, CHEMICAL SYNTHESIS, QUINOLINE, POLYNUCLEAR HYDROCARBON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1171

STEP NO--UR/0409/70/000/001/0078/0082

CIRC ACCESSION NO--AP0054071

UNCLASSIFIED

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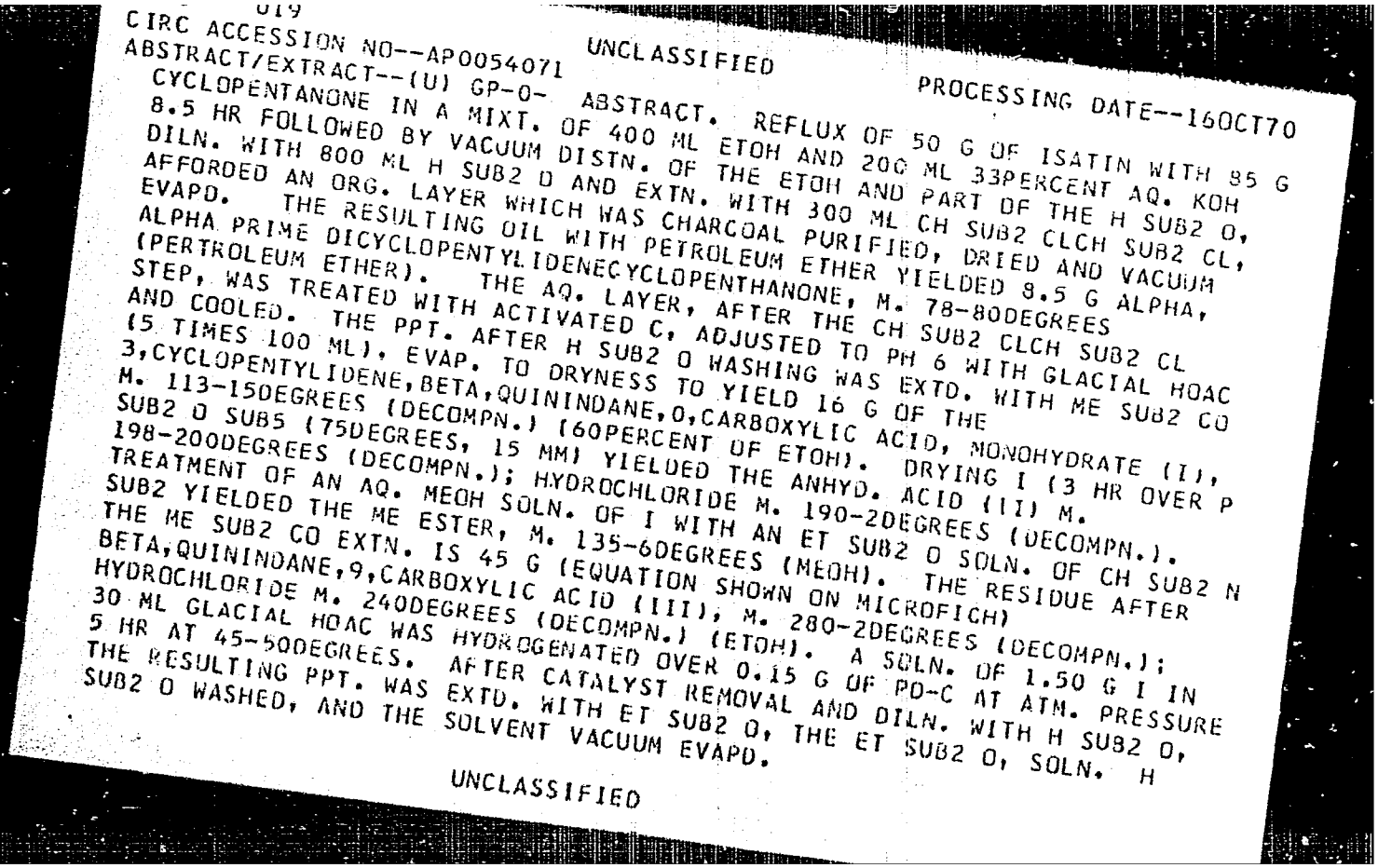

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CIRC ACCESSION NO--AP0054071 PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REFLUX OF 50 G OF ISATIN WITH 85 G CYCLOPENTANONE IN A MIXT. OF 400 ML ETOH AND 200 ML 33PERCENT AQ. KOH 8.5 HR FOLLOWED BY VACUUM DISTN. OF THE ETOH AND PART OF THE H SUB2 O, DILN. WITH 800 ML H SUB2 O AND EXTN. WITH 300 ML CH SUB2 CLCH SUB2 CL, AFFORDED AN ORG. LAYER WHICH WAS CHARCOAL PURIFIED, DRIED AND VACUUM EVAPD. THE RESULTING OIL WITH PETROLEUM ETHER YIELDED 8.5 G ALPHA, ALPHA PRIME DICYCLOPENTYLIDENECYCLOPENTHANONE, M. 78-80DEGREES (PERTROLEUM ETHER). THE AQ. LAYER, AFTER THE CH SUB2 CLCH SUB2 CL STEP, WAS TREATED WITH ACTIVATED C, ADJUSTED TO PH 6 WITH GLACIAL HOAC AND COOLED. THE PPT. AFTER H SUB2 O WASHING WAS EXTD. WITH ME SUB2 CO (5 TIMES 100 ML), EVAP. TO DRYNESS TO YIELD 16 G OF THE 3,CYCLOPENTYLIDENE,BETA,QUININDANE,O,CARBOXYLIC ACID, MONOHYDRATE (I), M. 113-15OEGREES (DECOMPN.) (60PERCENT OF ETOH). DRYING I (3 HR OVER P SUB2 O SUB5 (75DEGREES, 15 MM) YIELDED THE ANHYD. ACID (II) M. 198-200DEGREES (DECOMPN.); HYDROCHLORIDE M. 190-2DEGREES (DECOMPN.). TREATMENT OF AN AQ. MEOH SOLN. OF I WITH AN ET SUB2 O SOLN. OF CH SUB2 N SUB2 YIELDED THE ME ESTER, M. 135-6DEGREES (MEOH). THE RESIDUE AFTER THE ME SUB2 CO EXTN. IS 45 G (EQUATION SHOWN ON MICROFICH) BETA,QUININDANE,9,CARBOXYLIC ACID (III), M. 280-2DEGREES (DECOMPN.); HYDROCHLORIDE M. 240DEGREES (DECOMPN.) (ETOH). A SOLN. OF 1.50 G I IN 30 ML GLACIAL HOAC WAS HYDROGENATED OVER 0.15 G OF PD-C AT ATM. PRESSURE 5 HR AT 45-50DEGREES. AFTER CATALYST REMOVAL AND DILN. WITH H SUB2 O, THE RESULTING PPT. WAS EXTD. WITH ET SUB2 O, THE ET SUB2 O, SOLN. H SUB2 O WASHED, AND THE SOLVENT VACUUM EVAPD.

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CIRC ACCESSION NO--AP0054071 PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--THE RESIDUE WAS MIXED WITH WATER FILTERED TO YIELD 0.8 G 3,CYCLOPENTYL,BETA,QUININDANE,9CARBOXYLIC ACID (IV), M. 240DEGREES (DECOMPN.) (ETOH). A MIXT. OF 5 G II, 1.7 G ANHYD. NAOAC AND 30 ML GLACIAL HOAC WAS TREATED OVER 1 HR AT 100EGREES WITH 1.4 G BR IN 5 ML GLACIAL HOAC AND STIRRED 1 HR AT ROOM TEMP., AND THE PPT. FILTERED AND WASHED WITH H SUB2 O AND ME SUB2 CO TO GIVE 5.1 G 3,BROMO,3,(1,BROMOCYCLOPENTYL),BETA,QUININDANE,9,CARBOXYLIC ACID (V), M. 115-180EGREES (DECOMPN.), AFTER PPTN. FROM ME SUB2 NCHO SOLN. BY ADDN. OF H SUB2 O. IR, UV AND NMR DATA ARE GIVEN. FACILITY: VSES, NAUCH.-ISSLED. KHIM.-FARM. INST. IM. ORDZHONIKIDZE, MOSCOW USSR.

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USSR

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ALEKSEYEVA, L. M., PERESLENT, YE. M., SHEYNKER, YU. N., KOCHERGIN, P. M., KRASOVSKIY, A. N., and KURMAZ, B. V., All Union Scientific Chemical-Pharmaceutical Research Institute imeni S. Ordzhonikidze, Moscow

"Ring-Chain Tautomerism of S-Acylalkyl Substituted Imidazoles and Annelated Imidazole Systems"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 8, Aug 72, pp 1125-1131

Abstract: The ring-chain tautomerism of S-acylalkyl substituted 2-mercapto-4,5-diphenylimidazole, 2-mercaptobenzimidazole, 2-mercaptonapht[1,2-d]imidazole, 8-mercaptopurine, 8-mercaptotheophyline, and 2-mercaptoimidazoline has been studied by PMR and IR spectroscopy. Depending on the structure of aldehyde or ketone radical, or on the type of heterocycle condensed with the imidazole nucleus, depending on the state of the aggregate and on the type of solvent used, these compounds can exist as open heterylmercaptoaldehydes (ketones), as cyclic 3-hydroxy derivatives of imidazothiazoline systems or as mixed tautomeric forms. When a substituent exists on position 2 of the thiazoline ring, the cyclic compounds exist as a mixture of two disstereoisomeric forms.

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ALEKSEYEVA, L. M., DVORYANTSEVA, G. G., PERSIANOVA, I. V., SHEYNKER, YU. N., PALEY, R. M., and KOCHERGIN, P. M., All Union Scientific Chemical-Pharmaceutical Research Institute imeni S. Ordzhonikidze, Moscow

"Protonization of the Derivatives of Pyrrolo/1,2-a/benzimidazole"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 8, Aug 72, pp 1132-1137

Abstract: Protonization of a series of pyrrolo/1,2-a/benzimidazole derivatives in trifluoroacetic acid has been studied by PMR method. The 1,3-unsubstituted compounds protonize exclusively on the C_1 atom. Pyrrolobenzimidazoles with a methyl substituent on position 1 form a mixture of two protonized forms under identical conditions, corresponding to the addition of a proton to C_1 and C_3 respectively. Relative content of the C_3 protonized form decreases gradually from 81% to 18% going from a compound unsubstituted in position 3 to the respective 3-phenyl- and 3-methyl derivatives. Basicity constants of pyrrolobenzimidazoles decrease symbatically with the increase of the relative content of this form. Relative proton acceptor capability of indolinine, pyrrolo/1,2-a/imidazole and pyrrolo/1,2-a/benzimidazole has been calculated from the protonization data and from indexes of reactivity.

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YERMAKOV, A. I., SHEYNKER, Yu. N., MIKHLINA, YE. YE., YANINA, A. D., YAKHONTOV, L. N., and KOSTYANOVSKIY, R. G., All-Union Scientific Research Chemico-Pharmaceutical Institute imeni S. Ordzhonikidze, Moscow

"Mass Spectra of Some 3-Substituted Benzo/b/quinuclidines. III"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 6, Jun 72, pp 825-832

Abstract: The mass spectra of 3-methoxycarbonyl-, 3-ethoxycarbonyl-, 3-(2-dimethylaminoethoxy)carbonyl-, 3-amino-, 3-hydroxymethyl-, 3-chloro-3-methoxycarbonyl-, 3-chloro-3-ethoxycarbonyl-, and 3-chloro-3-cyanobenzo-/b/quinuclidine were studied. The results indicated that fragmentation of these compounds by electron impact took place over the formation of an open molecular ion that generally resulted upon cleavage of the bridge group containing the substituent or substituents. The C-Cl group had the weakest bond in the molecular ions derived from the disubstituted compounds - hence, $C^{\oplus}$ readily split off from the Cl-Ch-X group (X=COOR, CN) with the formation of a =CH - X group.

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USSR

ZASKO, F. A., and SHEYNKIN, M. Z.

"Welding Technology of Pipes of Steel Kh60"

Moscow, Stroitel'stvo Truboprovodov, No 1, Jan 71, pp 29-30

Abstract: An x-ray analysis of cracks in welded pipelines of steel Kh60, 1016 mm in diam and 12-14 mm wall, revealed that the cracks originated along the fusing line of the root layer of the weld bead and spreaded on the weld metal of the following layers, but did not propagate on the base metal. The use of a described technique in welding Kh60 steel pipes of 1016 mm in diameter eliminates the generation of cracks. Accordingly, the centering of the pipe buttwelds is carried out by means of hydraulic centering devices which secure the pipe edges until completion of the root layer weld, and the pipe edges are preheated up to 100-150°C. An illustrated propane preheater with 12 burners along the pipe perimeter provides a uniform heating.

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KLESHCHEV, G. V., TOLDIN, V. A., SHEYNKMAN, A. I., RASPOPOV, Yu. G., SHUMILOV, D. V., and TROFIMOV, V. G., Chelyabinsk Pedagogical Institute

"X-Ray and Electron-Microscopic Investigation of the Decay of Supersaturated Solid Solution in AlZn Alloys"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 30, No 4, Oct 70, pp 762-767

Abstract: A study was made of the decay of the supersaturated solid solution in AlZn alloys with 40, 50, and 60 wt. % zinc using the X-ray and electron-microscopic methods. The process of decay at tempering temperatures above 200 (but below 275°) depends on the rate of quenching of the specimen from the homogenizing temperature to the tempering temperature. During slow quenching a metastable α'-phase develops, while during fast quenching a stable α-phase develops. The possible reasons for such a dependence are considered. The role of the effect of foil thickness is noted.

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TITLE--STRUCTURE OF TITANIUM (IV) HYDROXIDE STUDIED IN RELATION TO CONDITIONS OF ITS PREPARATION -U-

AUTHOR-(02)-DOLMATOV, YU.D., SHEYNKMAN, A.I.

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CIRC ACCESSION NO--AP0104284

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE X RAY AND THERMOGRAPHIC DATA OF SAMPLES OF TI HYDROXIDES OBTAINED BY ALK. AND THERMAL HYDROLYSIS OF H SUB2 SO SUB4 AND HCL SOLNS. OF TI (IV) ARE PRESENTED. ALK. HYDROLYSIS OF COLD, HCL SOLNS. OF TI (IV) RESULTS IN THE FORMATION OF AMORPHOUS HYDROXIDES WHICH THEN CRYSTALLIZE INTO A MODIFICATION OF ANATASE AT 397-420DEGREES. AN EXOTHERMAL EFFECT IS OBSERVED UPON CRYSTN. SAMPLES WHICH ARE CALCINED AT 400DEGREES FOR 1 HR HAVE THE STRUCTURE OF ANATASE, WHILE THOSE CALCINES AT 200DEGREES ARE AMORPHOUS. ALK. HYDROLYSIS OF COLD, H SUB2 SO SUB4 SOLNS. OF TI (IV) HAVE THE ANATASE STRUCTURE. THERMAL HYDROLYSIS OF HCL SOLNS. RESULTS IN THE RUTILE STRUCTURE WHILE CORRESPONDING HYDROLYSIS OF H SUB2 SO SUB4 SOLNS. RESULTS IN THE ANATASE STRUCTURE.

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